MED
T113
+.Y12
6527

YALE MEDICAL LIBRARY
3 9002 08627 8950

"CHICKEN POT PIE?": A PHENOMENOLOGY OF QUESTIONS ASKED BY PATIENTS DURING PRIMARY CARE VISITS

David Elliott Walker

Yale University

1997

YALE
UNIVERSITY

CUSHING/WHITNEY
MEDICAL LIBRARY

Permission to photocopy or microfilm processing of this thesis for the purpose of individual scholarly consultation or reference is hereby granted by the author. This permission is not to be interpreted as affecting publication of this work or otherwise placing it in the public domain, and the author reserves all rights of ownership guaranteed under common law protection of unpublished manuscripts.

David E. Walker

Signature of Author

3/26/97

Date

YALE MEDICAL LIBRARY

AUG 0 4 1997

Digitized by the Internet Archive
in 2017 with funding from
Arcadia Fund

https://archive.org/details/chickenpotpiephe00walk

"CHICKEN POT PIE?": A PHENOMENOLOGY OF QUESTIONS ASKED BY PATIENTS DURING PRIMARY CARE VISITS

A Thesis Submitted to the
Yale University School of Medicine
in Partial Fulfillment of the Requirements for the
Degree of Doctor of Medicine

by
David Elliott Walker
1997

Med Lib
T 113
+. Y12
6527

ABSTRACT

"CHICKEN POT PIE?": A PHENOMENOLOGY OF QUESTIONS ASKED BY PATIENTS DURING PRIMARY CARE VISITS. David E. Walker (Sponsored by Nicholas H. Fiebach). Department of Internal Medicine, Yale University, School of Medicine, New Haven, CT.

There is increased interest in the effects of improved communication in the doctor-patient relationship. In their interventions to encourage communication within the medical dialogue, investigators have focused attention on patient questions as a key indicator of patient participation. However, investigators have not sought to further characterize what patients are asking. The author set out to do so, employing a qualitative approach to develop a methodology. Two important and potentially useful descriptors of patient questions were generated: question topics and question goals. The methodology was then tested on a sample of encounters between primary care patients and their providers. Patients were found to ask over 12 questions per encounter, 2 to 4 times the averages previously reported. Most questions were about medications, the logistics of the visit, or personal or interpersonal matters. Few questions were about health risks, prevention and prognosis, and even fewer were about matters of diagnosis, disease etiology and pathophysiology. Although most questions were asked to further the patient's factual knowledge, many were intended to express or appeal to emotions. The methodology and the findings are reviewed and discussed, and a theory of patient participation in the doctor-patient relationship is presented.

ACKNOWLEDGMENTS

The author wishes to thank his thesis advisor Nicholas Fiebach, M.D. for his sound counsel and sustained enthusiasm for and interest in this project; researchers Lynda Dixon Shaver, Ph.D., Paul Shaver, Ph.D., and Nicholas Fiebach, M.D. for their permission, encouragement, and assistance in the use of their data; Vaughn Keller, M.F.T. and the *Bayer Institute for Healthcare Communications* for a generous grant that funded the work; Mona Gregg and the *Office of Student Research* for a research stipend and assistance in the accounting and reimbursement; Mauricio Garrido, YMS IV for assessing the adequacy of the Spanish transcripts and translations, and for also being the second rater; Richard Torres, YMS II for his careful analysis and coding of the Spanish interactions; Cary Walker, my wife, for the initial encouragement during my third year of medical school to explore doctor-patient communication issues; and my children, Lucy and Nick, for trying to be quiet when necessary and sharing computer time so I could get this done.

TABLE OF CONTENTS

Introduction 1
Researching the Doctor-Patient Relationship 2
The Importance of Patients' Questions 4
A Review of the Empirical Literature on Patients' Questions 7
Qualitative Research and Grounded Theory Methods 16

Statement of Purpose 19

Methods 20
Subjects and Data Collection 20
Sources of Data 22
Development of Question Coding Categories 22
Encounter Coding Categories 30
Audiotape Coding Procedure 32
Statistical Analysis 34

Results 36
Sample Characteristics 36
Interrater Agreement 39
Encounter Characteristics 41
Characteristics of Patients' Questions 42
The Effect of Patient, Provider, and Encounter Characteristics on Questions 47

Discussion 51
Consideration of the Methodology 51
Limitations of the Test Sample 55
The Number and Rate of Questions 55
The Topics and Goals of Questions 58
Patients' Questions and the Nature of Patient Participation 59
Implications for Clinical Practice and Suggestions for Further Research 62
Summary 63

Appendix A. The Questions 64

Appendix B. Effects of Third Party Presence on Patient Question-Asking 70

References 71

INTRODUCTION

In the 1950s, Parsons presented the prevailing view of the patient's role in the doctor-patient relationship, one that has endured for most of this century [Parsons, 1951]. Parsons's model patient was passive and compliant, whose only obligation was to seek competent help from a physician and then cooperate in the process of getting well. The patient was not to question, but listen to and follow the physician. The image of unquestioning patient submission has left an indelible mark.

Over the past 40 years, the image has been shaken by a number of powerful forces at work in American society. In the 1960s and 1970s, the civil rights movement, the Vietnam War, and the Watergate scandal unleashed deep sentiments to question authority and to empower the powerless. Reflecting these sentiments, the doctrine of informed consent was reinterpreted. Although the first judicial ruling on this doctrine occurred early in the century, it was not until the 1960s that it attracted any attention, and not until 1971 that it was seen as a powerful patient tool in the negotiation of care between patient and physician [Annas, 1975]. The rulings established the duty of the physician to provide advice and adequate information to a patient in order to assist the patient in making his own decision concerning a course of action. In its reinterpretation of the doctrine of informed consent, the law was offering a new image of the doctor-patient relationship, one of mutual participation and patient empowerment.

Alongside of these legal developments, the 1970s and 1980s saw the rise of popular movements to enable the patient, namely the self-help and consumer rights movements. Advocates called for patients to play an active role in their own health care, to take full responsibility for "our bodies,

ourselves," and to question the physician's long held hegemony in medical matters. To do so was the patient's prerogative, their right as healthcare consumers. At this time, health education came into being as the science of self-help, devoted to the study and teaching of patient advocacy.

Now in the 1990s, the rise of managed care has only intensified advocacy for the patient. In today's medicine-as-business environment, patients are portrayed as having to fend for themselves, because their doctors, and the third-parties these doctors may increasingly represent, will not. The traditional doctor-patient relationship, as Parsons portrayed over 40 years ago, continues to be challenged. And yet, many would agree, the image of the good patient as submissive and unquestioning, though battered over time, has somehow, remarkably endured.

Researching the Doctor-Patient Relationship

Although the concepts of patient empowerment and mutual participation in the doctor-patient relationship were gaining legal, philosophic, and popular support, little was known in the 1960s and 1970s about their consequences. The literature on the doctor-patient relationship, up to that point, was largely anecdotal and editorial. Experimental research about it was scarce.

In the 1970s, the American Board of Internal Medicine began a reexamination of the doctor-patient relationship by calling for internal medicine training programs to emphasize the development of communication skills among its residents [American Board of Internal Medicine, 1979; Council on General Internal Medicine, 1977]. It asked that faculty members observe the communication skills of trainees on a regular basis and that they evaluate these skills formally before a resident is declared

eligible to take the Board's certification examinations. In the early 1980s, other primary care specialties--family medicine and pediatrics--similarly called for increased attention on communication skills in their training programs [Pantell, et al., 1982; Special requirements for residency training in family practice, 1978].

Motivated in part by these pronouncements, the mechanisms were set in place to collect experimental data on doctor-patient communication, in particular the communication skills of residents in training. The early findings did not inspire much confidence, but rather portrayed the barriers, gaps, and confusion that often arise when physicians and patients talk [Catlin, 1981; Duffy, et al., 1980; Korsch, et al., 1968; Platt and McGrath, 1979; Starfied, et al., 1981]. However, empirical findings were also emerging that showed that improved doctor-patient communication affected important patient outcomes: satisfaction [Cartwright, 1964; Koos, 1955; Korsch, et al., 1968; Svarstad, 1974], compliance [Davis, 1968; DiMatteo, 1979; Francis, et al., 1969; Hulka, et al., 1975; Svarstad, 1974], information retention [Ley, et al., 1976], and eventually and ultimately, improvements in health [Hall, et al., 1988; Kaplan, et al., 1989].

What was it about communication that was having an effect? Prompted by these and other similar findings, researchers in the 1960s and 1970s began to perform in-depth analyses of the communication between doctors and patients. Interaction analysis came into being. Collecting data via audiotaping, videotaping, and direct observation of the medical interview, the new research then employed various quantitative, analytic coding methodologies, of which many have been developed.[1] These methodologies

[1] A recent meta-analysis of this research noted that in 61 studies, 28 different interaction analysis schemes were used [Roter, 1990]. The most commonly used methodologies were developed by Bales [Bales, 1950], Roter [Roter, 1977], and Stewart [Stewart, et al., 1979].

break down the encounter into its smallest measurable unit, the "utterance," representing the expression of one idea. The utterances are then coded individually in one of two main classification systems: either by content categories (e.g. "test results" or "medications") or by "speech act" categories (e.g. "provides information" or "asks a question") [Stiles and Putnam, 1990]. These coded utterances are then analyzed to explain what might be happening in medical talk. Nonverbal communication was also coded when videotaped data was collected.

This more intensive and analytic approach to understanding the medical dialogue was yielding similar findings, that specific communication variables were consistently and positively correlated with improved outcomes [Bain, 1979; Bertakis, 1977; Boreham and Gibson, 1978; Roter, 1977; Stiles, et al., 1979]. Although physician communication was studied more often than patient communication [Roter, 1990], and many more physician than patient variables were identified [Hall, et al., 1988], it was evident that patient communication patterns had similar positive effects. For example, increased patient participation in the dialogue directly impacted physician communication and was predictive of medical outcome [Greenfield, et al., 1985; Kaplan, et al., 1989; Orth, et al., 1987].

The Importance of Patients' Questions

How has "patient participation" been defined? There is little agreement among researchers as to the meaning of "patient participation." Many equate it with compliance with the physician's treatment plan [Kirscht and Rosenstock, 1979], selection of specific treatments [McNeil, et al., 1982; McNeil, et al., 1978; Paukner and McNeil, 1981], or self-care or self-monitoring [Hayes-Bautista, 1976; Vickery and Fries, 1976]. Others have defined patient

involvement in care within the context of the medical encounter, because it is there that patients have the greatest impact on medical decisions and course of treatment [Greenfield, et al., 1985]. Within the encounter, some researchers have consistently pointed to patient question-asking as the single best indicator of patient involvement [Greenfield, et al., 1985; Roter, 1977]. The more involved patients are in their care, the more questions patients ask in the medical interview, and visa versa.

The asking of questions is a critical element in the medical interview. One of the goals of the encounter is the exchange of information, from patient to doctor, and then back to patient. The flow of information from patient to doctor is facilitated by the doctor's armamentarium of diagnostic queries. However, Waitzkin notes that getting information to flow the other way, from doctor to patient, has been problematic:

> Patients almost always want as much information as possible, and doctors often do not realize this. The misattribution of the desire for information is one of the most common errors in clinical practice. [Waitzkin, 1984]

Patients desire information on a wide range of topics. Doctors often underestimate the desire and spend very little time providing information. One study reports that physicians spend less then 1% of their time in the medical interview making explanatory statements to patients [Waitzkin and Stoeckle, 1976]. Moreover, doctors from the same study overestimated by a factor of *nine* how much time they actually spent in explaining medical issues to their patients. Patients often leave the encounter without the information they desire. One recourse for the patient for eliciting this information is the asking of questions.

Observers of the medical interview have long noted that patients do not ask their doctors questions. This muteness seems to have been accepted

as an unfortunate but not fundamental weakness of the doctor-patient relationship. The literature is rich in theories to explain the observation.

One school of thought has suggested that this muteness originates from the physician's unwillingness to communicate to the patient. This unwillingness on the doctor's part is based on two major perceptions [Freidson, 1970a]: first, that the patient is incompetent to comprehend or emotionally cope with medical information, and second, the informed, questioning patient is a threat to the physician's status and control over the medical encounter. As a result, the physician tends to view and treat the patient not as a responsible adult, but as a child [Szasz and Hollender, 1956]. This paternalistic view is adopted by the patient and reinforces passivity, stifles question-asking, and gives professional license to the physician to limit the amount of information imparted [Cartwright, 1964]. A vicious cycle is established, where the patient waits for the doctor to explain, while the doctor perceives the patient's reticence as further evidence of patient disinterest and incompetence:

> ...when the doctor perceives the patient as rather poorly informed, he considers the tremendous difficulties of translating his knowledge into language the patient can understand along with the dangers of frightening the patient. Therefore, he avoids involving himself in an elaborate discussion with the patient; the patient, in turn, reacts dully to this limited information, either asking uninspired questions, or refraining from questioning the doctor at all, thus reinforcing the doctor's view that the patient is ill-equipped to comprehend his problem. [Pratt, et al., 1957]

Lending support to this analysis, patients who did receive more information from their physicians were noted to respond with slightly more questions [Pratt, et al., 1957].

Other theorists have placed less blame on the physician's control of information and more on certain qualities of the patient. It is not that

patients do not have physician-imparted information and thus do not know what to ask, but that they do indeed have questions but refrain from asking them. Explanations for this reluctance on the patient's part have included not wanting to bother the doctor [Kutner, 1958; Reader, et al., 1957], an unwillingness to appear ignorant [Svarstad, 1974], deference to expert authority [Freidson, 1970b], and an uneasiness in communicating with a perceived member of a higher social class [Osofsky, 1968; Rainwater, 1968].

As provocative as these theories are, they serve to illustrate that the questions patients *do* ask, albeit rare, represent a precious commodity. They provide a unique "window" into the doctor-patient relationship. Given the information bind in which patients find themselves -- desiring more information from their doctors but not receiving it -- patient questions assume an unusually important function in the medical encounter that should not be underestimated. Perhaps more than any other facet of communication within the encounter, patient questions define "patient participation." Moreover, considering the recent history of advocacy for increasing patient participation, questions may become a linguistic litmus test of patient empowerment in a changing, more mutual doctor-patient relationship.

So, what exactly are patients asking? This study, a phenomenology of questions that patients ask, is one response to this seemingly simple query.

A Review of the Empirical Literature on Patients' Questions

The empirical literature on patient questions is limited. A search of Medline and PsychInfo databases produced six studies dedicated exclusively to the topic. One of the six was etiologic in nature, examining factors that may explain increased question-asking. The others were interventional studies,

aimed at encouraging patients to ask more questions in the clinical interview and then assessing the outcome. None is purely descriptive in nature, i.e., devoted to further characterizing the questions that patients ask. Despite this, descriptive information on patient question-asking can be gleaned from this research.

Beisecker and Beisecker address the etiology of patient question-asking within a wider context of patient "information seeking behaviors" [Beisecker and Beisecker, 1990]. They define these behaviors as the sum of question-asking and the initiation of topics in the dialogue. The investigators tape-recorded encounters between doctors and rehabilitation medicine patients, and tallied their information-seeking behaviors. Beyond these counts, there were no other descriptive measures of patient questions. The study's goal was to examine factors that influence or explain patients' information seeking behaviors, including attitudinal, sociodemographic, and situational factors.

The seminal interventional study, aimed at getting patients to ask more questions in the clinical encounter, was done by Roter [Roter, 1977; Roter, 1984]. The intervention used in this randomized controlled trial was a 10-minute, pre-visit consultation with a health educator who assisted the patient in formulating questions. Patient encounters were then tape-recorded and analyzed with the newly devised Roter Interaction Analysis System (RIAS), which would become a standard in the interaction analysis literature. The descriptive measures of patient questions included their number, directness, and topic. "Direct" questions were defined by their "intention to seek new information and are clearly patient initiated," whereas "indirect" questions were those that "relate to an intention to seek repetition, clarification, greater detail or assure understanding, and are a response to a previous physician statement." Eight question topic categories were

identified by a content analysis: etiology, diagnosis, prognosis, disease prevention, medications, diet, and health promotion (including smoking, alcohol use, and exercise), as well as a category for all "non-medical" topics. Because entire conversations were analyzed using the RIAS, identifying every "utterance," a percentage of all the patient's "utterances" that were questions could be computed.

Another test of a face-to-face waiting room intervention involved a 20 minute interview where patients with ulcers were taught to read their own medical record and coached to ask more questions [Greenfield, et al., 1985]. The only descriptive measure of questions in this randomized controlled trial was the number of questions asked during the visit, determined by an analysis of tape-recorded interactions. In addition to patient questions during the encounter, the study examined the effect of the intervention on patients' functional status.

Reactions to these more elaborate interventions spawned three studies that used simpler maneuvers. One employed a brief and inexpensive booklet that encouraged and modeled patient questions [Tabak, 1988]. Again, the only descriptive measure of patient questions was the number of questions asked, determined by an analysis of tape-recorded interviews. Another study used two simple waiting room handouts, namely a blank sheet of paper on which patients were encouraged to compose their questions and a brief message from the patient's physician encouraging question-asking during the upcoming visit [Thompson, et al., 1990]. Once again, the only descriptive measure of patient questions was the number asked, but determined retrospectively as the mean of patient and physician estimates.

The final study used a similar question prompt sheet preceding initial oncology consultations [Butow, et al., 1994]. A computer-based program was

used to analyze the taped consultations, coding question "source" (doctor, patient, or third party), "process" (open- or closed-ended questions) and "content category" (i.e. diagnosis, prognosis, treatment, medical history and presenting symptoms, other medical matters, social matters and other). These codes were developed following a content analysis of a subset of taped consultations. The computer program was also able to record the real time duration of patient questions, as well as the entire interaction duration, providing a measure, similar to Roter's, of percentage of question-asking in the interview.

Although not central to this review, it is worth pointing out that the results of these interventional studies were mixed and somewhat contradictory. On one end of the spectrum, Thompson, et al.'s question list and message encouraging questions produced significantly more patient questions in the encounter, accompanied by less patient anxiety, greater feelings of control for the patient, and overall patient satisfaction. On the other end, Tabak's similar intervention, a booklet of exemplary patient questions, had absolutely no effect on the number of patient question and satisfaction with the encounter. The other interventions produced mixed results. Butow, et al.'s oncology prompt sheet, although it did not increase the number of questions, did encourage more questions about prognosis. Roter's teaching session to assist in the formulation of questions was effective in increasing the number of "direct" or patient initiated questions, increasing questions about diagnosis, prognosis, and health promotion, and getting the patient to return for a follow-up appointment. However, the doctor-patient encounters for those patients who received the intervention were characterized by increased negative affect, anxiety, anger, and decreased satisfaction with the visit. Finally, Greenfield, et al.'s most elaborate

intervention, teaching patients to read their chart and coaching them in their questions, showed no effect on the number of questions asked in the consultation, but did improve patient's functional status measured two months later. These results suggest that patient question-asking is a complex behavior, one that is not easily and simply manipulated. As Greenfield, et al. aptly conclude, "the mechanism by which patients seek information and attempt to influence the physician is a subtle process" [Greenfield, et al., 1985].

In order to glean descriptive information about patient questions from these studies, it is informative to examine the data from their control groups. Although the sample sizes are small and the descriptive measures are limited, a picture of what patients ask their doctors emerges.

The Number of Questions

In a variety of settings, patients asked between 3 to 6 questions, on average per visit, as shown in Figure 1. These widely varying sample populations and settings include: rehabilitation medicine and muscular

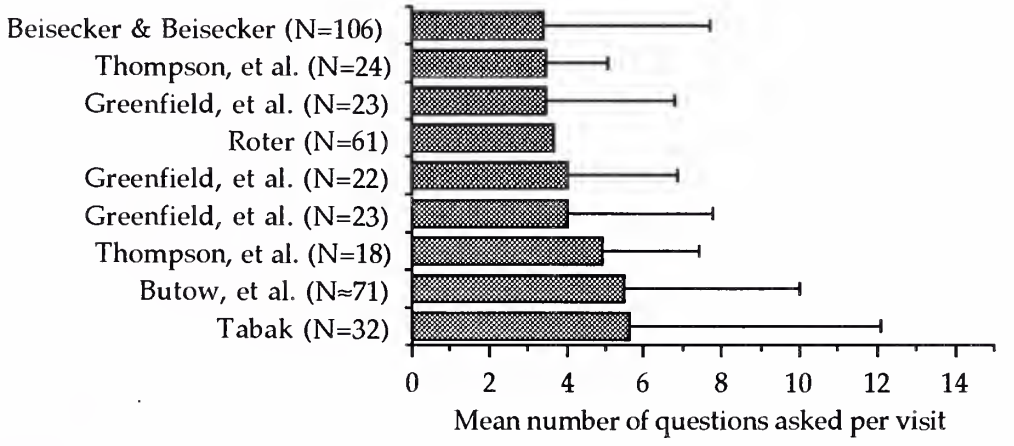

Figure 1: Reported mean number of questions asked by patients per visit. Except for Beisecker and Beisecker, whose study was observational, numbers are taken from control sample data. Those studies represented more than once had multiple control samples. No standard deviation was available for Roter's data.

dystrophy clinic patients [Beisecker and Beisecker, 1990]; affluent, suburban women at a private obstetrics and gynecology practice [Thompson, et al., 1990]; male patients at an ulcer clinic [Greenfield, et al., 1985]; predominantly poor, African American women at a community health clinic [Roter, 1977; Roter, 1984]; first visits between cancer patients and their oncologists [Butow, et al., 1994]; and middle-aged working class patients at an inner-city family practice clinic [Tabak, 1988].

Though the means are reasonably consistent, there is a wide degree of underlying variability within the samples (note the wide error bars). Explaining the variability has been a point of focus for these investigators and others. Sociodemographic characteristics of the patients account for some of this variability: female patients [Waitzkin, 1984; Wallen, et al., 1979], more educated patients [Hall, et al., 1988; Street, 1992; Street, et al., 1995], and patients with higher socioeconomic status [Shapiro, et al., 1983] tend to ask more questions during the encounter.[1] There are conflicting results as to the whether older or younger patients ask more questions [Beisecker and Beisecker, 1990; Butow, et al., 1994; Street, et al., 1995]. Patient attitudes, namely one's sense of "right of access" to medical information, may better explain the variability [Haug and Lavin, 1983]. Others have found that certain qualities of the physician, like female gender [Roter, et al., 1991] and using a "patient-centered" approach, i.e. physician behaviors that encourage patient participation and partnership [Street, et al., 1995], accounts for why some patients ask more questions than others. Finally, others point to certain situational characteristics, like being an outpatient as opposed to an inpatient [Butow, et al., 1994], having long encounters, a specific diagnosis, or the

[1]Regarding socioeconomic status, Waitzkin found that there was no difference between poorly educated, lower-class patients and better educated, upper-class patients in their desire for information [Waitzkin, 1984].

reason for the visit [Beisecker and Beisecker, 1990] as best explaining the variability.

There are three general problems in the counting of questions and the reporting of the results. First, it is unclear in most of these studies how patient questions were identified. Among scholars of linguistics, the identification of a question is a matter of great debate [West, 1983]. Do you count only those statements where the subject and verb are in a reversed order (e.g. "Is this a question?")? What about those statements that end with raised inflection (e.g. "This is a question?")? Only one study reviewed here presented an explicit method for question identification [Tabak, 1988].

Second, the reporting of a mean number of questions per visit is misleading given that the distributions they represent do not appear normal. For example, Beisecker and Beisecker noted that 30 patients in their sample of 106 patients asked no questions at all, giving a mode of 0. Likewise, about one third of Roter's control sample did not ask any questions. A bimodal distribution best characterizes these distributions. Yet, both of these studies proceed to use this data in further *parametric* testing, calling into question the validity of some of their findings.

Third, these studies did not control for the duration of the visit when reporting the mean number of questions asked. Obviously, the number of questions per visit is highly dependent on the timed duration of the visit as Beisecker and Beisecker's results have shown [Beisecker and Beisecker, 1990]. It would appear that a *rate* of question-asking is a more appropriate measure, to control for elapsed time.

The Topic of Questions

Two of the studies examined the topic, or content, of the questions asked. Roter's community health clinic patients asked mostly about "non-medical" topics, followed by questions about "medications" and "etiology" and much less about "diagnosis" and "prognosis." Butow, et al. report that cancer patients asked predominantly about "treatment," then "diagnosis" and "other medical matters" in their questioning. These patients asked least about "social matters" and "other" questions.

Given the different clinical settings and patient samples, comparing the two results is meaningless. However, the results share a common methodologic problem: there are too few content categories (Roter has 8; Butow, et al. has 7). Having too few categories only increases the breadth within each, thus providing more generalized and less meaningful information. For example, most of Roter's patients asked about "non-medical" topics. It would be interesting to know what these topics are. More content categories would aid in the understanding of what patients are really asking.[1] Multiple categories could then be collapsed into a smaller number of major topic categories, if necessary.

The Initiation of Questions

One third of the questions asked by Roter's controls were "direct" or patient initiated, while the rest were "indirect" or provider initiated. The finding has not been replicated, yet alone examined, by other studies. Considering the relevance of this aspect of patient questions, that patient

---

[1] Tabak has a similar conclusion, that "the variety in the content and exact wording of questions asked on the tapes of the interactions showed that question-asking is complex, possibly requiring more refined categorization."

initiated questions may reflect more active patient participation in the dialogue, further examination would be worthwhile.

The Timing of Questions

One investigation timed the duration of each question, as well as the length of the entire encounter [Butow, et al., 1994]. Patient questioning occupied 1.8% of the entire oncology consultation. Although patients talked an average of 6.7 minutes, they spent only 31.6 seconds (i.e. 7.8% of the time they talked) asking questions. This corresponds to Roter's finding that question-asking accounted for 7.6% of all control patient "utterances."

Although the RIAS [Roter, 1995] now categorizes the dialogue according to the phase of the clinical interview (i.e. greeting, medical history, physical examination, discussion and plan, and closing), when patients' questions occur has not yet been reported using these dimensions.

Trying to gather rich descriptive data about patient questions from these studies is somewhat akin to trying to take in a wondrous cathedral from the back seat of a taxi. Although one can catch a limited view, it is rather quick and unsatisfying, and prompts one to go back, to linger and explore. The investigations described above, like the view from the taxi, were not designed to be richly descriptive. Their focus is on the question-prompting intervention and its effect, and not on being phenomenologic. The use of interaction analysis methodologies, like the RIAS, makes it difficult to be richly descriptive about any one aspect of the dialogue given the demands of the method. Since entire interviews are coded, utterance by utterance, the descriptive measures for each utterance by necessity must be few and limited.

To include additional measures would increase the analytic effort exponentially. Thus, specific aspects of the conversation, like patient question-asking, are described in general terms. Because previous investigations have not been phenomenologic, the current measures characterizing patient questions may not be the most meaningful or valid. Consequently, the interventional studies that employ these measures may not be examining the most important effects of their experimental manipulations. Phenomenology should precede and inform interventional research. Now, after the taxi ride, there is a need to go back and explore.

Qualitative Research and Grounded Theory Methods

Considering these limitations, a suitable methodology that can adequately describe the subtlety, complexity and richness of the questions patients ask is needed. As one of the leaders of doctor-patient communications research has noted, "many researchers have experienced an uneasy sense that the available methods do not adequately capture some of the most important and interesting features of medical encounters" [Waitzkin, 1990]. A more descriptive approach, namely a qualitative methodology, may help to generate fresh and valid concepts about the questions that patients ask their doctors.

In recent years, there has been renewed interest in qualitative methods as an alternative to the traditional quantitative methods of research in the clinical and behavioral sciences [Inui and Frankel, 1991]. The *quantitative* approach employs biostatistical and epidemiological techniques to determine the association between independent and dependent variables. It is hypothesis-driven, in which a priori hypotheses are specified, tested, and if not disproved, strengthened. Quantitative research strives for reliable

measurement of predefined concepts and the exclusion of investigator bias. When the measuring is accurate, unbiased and relevant to the study subjects, and when appropriate statistical techniques are employed, quantitative data can be generalized, and thus replicated by others. *Qualitative* research, on the other hand, uses case and field study designs common to the ethnographic tradition in anthropology and education, and similar to the qualitative traditions in sociology and psychology [Miller and Crabtree, 1992; Tesch, 1990]. It is typically interpretive, relying on observations and interviews in order to generate descriptions, themes, concepts, taxonomies, portraits, or theories. Because of its interpretive nature, a priori hypotheses are difficult to specify. Its data collection techniques are typically open-ended and iterative, yielding detailed descriptive data that reveals patterns and connections. The investigator's participation and subjectivity can be an integral tool in qualitative research.

Quantitative and qualitative approaches have been polarized into two opposing camps. Currently, there is growing interest among researchers to explore integrated "multimethod" approaches [Inui, 1996; Stange, et al., 1994; Steckler, et al., 1992], especially in the study of doctor-patient communication [Waitzkin, 1990]. "The multimethod approach is a strategy for overcoming each method's weakness and limitations by deliberately combining different types of methods within the same investigation" [Brewer and Hunter, 1979]. As Inui notes, the question is not whether one method is superior to the other, but "when, and under what circumstances, one approach is more appropriate than the other." [Inui, 1996]

To study patients' questions, a sequential use of a multimethod approach could be used [Stange, et al., 1994]. First, to generate meaningful and valid concepts to describe patients' questions in the context of the medical

encounter, a qualitative method would be appropriate. More than content analysis, which characterizes one dimension -- like the topics -- of questions, a qualitative approach could reveal new dimensions of questions altogether. Second, these new dimensions could then form the basis of a coding scheme in a quantitative survey and analysis.

In their book, Basics of Qualitative Research: Grounded Theory Procedures and Techniques, Strauss and Corbin present a "grounded theory approach" to undertaking qualitative research [Strauss and Corbin, 1990]. A grounded theory is "one that is inductively derived from the study of the phenomenon it represents." The investigator begins by immersion in the material being studied, carefully observing and contemplating it. For example, to study patient questions, the investigator listens closely and thoughtfully to patient-doctor talk, trying to understand and describe, as if it were completely new and foreign, what might be happening when a patient asks a doctor a question. This open-ended process, known as "open-coding," is a central feature of the grounded theory approach. It represents "the process of breaking down, examining, comparing, conceptualizing, and categorizing data." It is this approach that may offer the most meaningful answers to that seemingly simple query, *"So, what exactly are patients asking?"*

STATEMENT OF PURPOSE

The purpose of this study is fourfold. First, using open-coding procedures, a methodology that characterizes the questions that patients ask will be developed. Second, this qualitatively-derived methodology will be tested in a sample of patient-physician encounters. Third, conventional quantitative methods will be used to explore the associations between question-asking and the characteristics of patients, doctors, and encounters. Regarding these associations, it is hypothesized that higher educational and socioeconomic status of the patient [Hall, et al., 1988; Shapiro, et al., 1983; Street, 1992; Street, et al., 1995] and female gender of both the physician [Roter, et al., 1991] and the patient [Waitzkin, 1984; Wallen, et al., 1979] will increase question-asking during the visit. Fourth, the findings will then be reviewed and discussed, considering how they may inform an understanding of the nature of patient participation in the doctor-patient relationship.

METHODS

Subjects and Data Collection

During a four day period in June, 1993, adult patients awaiting routine medical visits at the Primary Care Center (PCC) were asked to participate in a healthcare communications study. These data were initially gathered by primary researcher Lynda Dixon Shaver, Ph.D. (Bowling Green State University) and co-researchers Nicholas H. Fiebach, M.D. (Yale School of Medicine) and Paul M. Shaver, J.D., Ph.D. (Indiana University South Bend) for a project entitled "Ethnographic Study of Health Provider/Patient Discourse at University-affiliated Teaching Hospitals: The Impact of Communication Processes on Health Care Delivery Part I."

The PCC is the hospital-based general medicine clinic for Yale-New Haven Hospital in New Haven, Connecticut. The PCC patient population is socioeconomically and ethnically diverse and includes a large number of patients who receive Medicare and Medicaid benefits. Adult patients in this outpatient facility are cared for by faculty physicians, internal medicine residents, nurse practitioners, and a few physician volunteers.

One hundred seventy-six patients in the PCC waiting room were invited by research assistants to participate. Each was given a consent form to read (or, if illiterate, was read to them) which briefly described the study as an investigation of "communication between healthcare providers and patients" requiring tape recording of their conversations with the nurse and doctor. One hundred and twelve patients (64%) gave written consent and then completed a brief demographic questionnaire regarding their gender, age, ethnicity, education, employment, and perceived income and health status.

For those patients who did not consent, the research assistant noted their gender and approximated their age (within a 5 year range) and ethnicity. Their reasons for not participating were as follows: 21 patients (33%) gave no reason; 14 patients (22%) did not seem to understand the research assistant's request; 10 patients (16%) cited language barriers; 4 (6%) did not want to be recorded; 2 (3%) cited physical impairments; 2 (3%) said it was a first clinic visit; 2 (3%) reported that they had participated in research before and did not wish to do so again; and the remaining 9 patients (14%) cited various other reasons.

Forty-four primary care providers (faculty physicians, residents, nurse practitioners, and medical students) also gave written consent to participate in the study. They were told only that they would be participating in a healthcare communications study and that their clinic visits might be tape recorded. There were two physicians who did not want to participate and their reasons are not known. Demographic data for all the primary care providers was collected. Although twelve nurses also agreed to participate in the study, their taped encounters with patients were not included in this analysis because they were not primary providers.

The tape recorders were positioned in open view in the examination rooms prior to the data collection. Tapes were replaced prior to the patient's entrance and after the patient's departure. Tape recorders were sound-activated thus pausing the recording during prolonged moments of silence. The research assistant was not in the examination room during the encounters.

Sources of Data

Sources of data for the study were threefold: the patient demographic questionnaire, the physician demographic questionnaire, and the audiotaped interviews. These interviews were transcribed by an experienced transcriptionist. Seven interviews were conducted in Spanish and were transcribed and then translated to English by the same transcriptionist, who also had Spanish training. One interview was conducted in Vietnamese and was not translated or transcribed. Any identifying data on the transcripts was removed for confidentiality and blinding purposes.

Development of Question Coding Categories

A total of eleven categories were used to characterize the questions that patients ask their primary care providers: "Question Topic," "Question Topic Explicitness," "Question Topic Originator," "Follow-up Question," "Question Goal," "Question Additional Goal," "Question Order," "Question Timing," "Question Endedness," "Question Tone," and "Third-Party Question."

Three of these coding categories --"Question Endedness," "Question Topic Originator," and "Question Timing"-- were previously developed and described by Roter [Roter, 1977; Roter, 1984; Roter, 1995]. "Question Endedness" was rated dichotomously as either open- or closed-ended. Open-ended questions were defined as those that seek more elaborate explanation or opinion, often beginning with "what," "why," "could," or "how" (e.g. "Why does it still hurt so much?"). Closed-ended questions seek specific and focused answers from the physician (e.g. "What is my cholesterol level?") and generally can be answered by a response of one or two words or "yes" or "no." The "endedness" of questions has been an important coding category used to

describe both patient and physician questions in the Roter Interaction Analysis System (RIAS) [Roter, 1995]. "Question Topic Originator" had two dimensions: patient-originated versus provider-originated questions. Patient-originated questions refer to those patient questions about topics that the patient, and not the provider, has raised. Provider-originated questions refer to those patient questions about topics that have been previously raised by the provider. This category was previously conceived by Roter as "direct" and "indirect" question-asking forms [Roter, 1977; Roter, 1984]. The "Question Timing" category refers to the phase of the medical interview where the question was asked, either in the greeting phase, history phase, physical examination phase, counseling phase, or closing phase. The RIAS divides patient-doctor encounters into these "interview segments" to determine whether certain categories of talk typically characterize a segment of the interview [White, et al., 1994].

Eight of the question coding categories and their properties were developed by the author through open-coding procedures, as outlined by Strauss and Corbin [Strauss and Corbin, 1990]. Following these procedures, a subset of ten, taped, patient-provider encounters were selected for their potential high yield of patient questions. These ten tapes consisted of three whose transcripts were previewed by the author before the study was conceived and were known to have multiple questions plus seven whose transcripts were notably long and were presumed to have multiple questions.

While following along on the transcripts, the author listened to the 10 taped interviews and identified 123 patient questions. For each question encountered on the tape, the author stopped the tape player, transcribed the question again, and entered into a database as many concepts as possible to describe each question. For example, when the author heard the question,

"What is wrong with me, do you know?", the following statements about the question were generated:

- This question is about the identity of the illness, or diagnosis.
- This question is searching for an explanation.
- This question is also seeking reassurance.
- This question sounds frustrated, impatient, perhaps fearful.

Then, a few moments later, after considering the next question, "Do you think it's doing something to my kidneys?", a set of new statements or concepts were generated:

- This question's subject is not clear from the question alone.
- This question, taken in context, asks about medication side-effects.
- This question is seeking specific information instead of an explanation.
- This question is also seeking reassurance.
- This question sounds concerned, if not worried.

Two analytic procedures described by Strauss and Corbin were used repeatedly, and often unconsciously, during open-coding [Strauss and Corbin, 1990]. The first was the *asking of questions* by the researcher, like: What is this patient's question about? What is really going on here? What is the patient really asking? The second was the *making of comparisons*, the comparing of concepts with each other, question after question, concept after concept, thus developing, distinguishing, and refining the concepts in the process.

After listening to a few of the selected tapes, the concepts were clustering into a several distinct categories. For example, from the above questions and the concepts generated, the following categories were apparent:

Categories
- the topic of the question
- the explicitness of the topic from the question itself
- the goal of the question
- the tone of the question

The concepts that were the basis of each category became the *properties* of that particular category. Properties, as defined by Strauss and Corbin, are the "attributes or characteristics pertaining to a category." These properties then formed the basis for the coding dimensions for each category. Now, continuing with the example, the properties of each category could be delineated:

Categories	Properties
• question topic	diagnosis, medication side-effects, etc.
• question topic explicitness	explicit versus implicit
• question goal	specific information, explanation, reassurance, etc.
• question tone	frustrated, impatient, fearful, concerned, worried, etc.

This open-coding approach was used methodically for all 123 questions from the 10 selected interviews. The procedure was stopped after no new categories were emerging and the category properties were diminishing.

The eight question coding categories that were generated were "Question Topic," "Question Topic Explicitness," "Follow-up Question," "Question Goal," "Question Additional Goal," "Question Order," "Question Tone," and "Third-Party Question."

"Question Topic" coded for what the question was about, i.e. the content or subject, and was quite often the literal subject of its sentence. Twenty different topics were identified during the initial open-coding. Because of their number and variety after listening to only 10 interviews, this category was left open during the final coding to allow for the inclusion of additional topics. Sixteen new topics were added after listening to all the interviews. For subsequent analyses, these 36 topics were grouped under eight topic headings, all of which are listed in Table 1.

Table 1. Question Topics (grouped under eight topic headings)

DIAGNOSIS, ETIOLOGY, & PATHOPHYSIOLOGY
- normal physiology
- disease etiology
- diagnosis
- disease pathophysiology

SIGNS & SYMPTOMS
- disease symptomatology
- physical exam findings

RISK, PREVENTION, & PROGNOSIS
- disease risk factor
- family health risk
- disease prevention plan
- drugs & alcohol
- exercise
- diet
- sexual conduct
- smoking
- disease prognosis

DIAGNOSTIC TESTING
- diagnostic testing plan
- diagnostic testing results

MEDICATIONS
- medication plan
- medication purpose
- medication effect
- medication side-effect

CONSULTS, REFERRALS, & TREATMENT PLANS
- consults, referrals, & other doctors
- procedures & non-medication treatment plan
- home-care issues

VISIT-LOGISTICS
- visit-related, including clinic paperwork
- all other paperwork
- physical exam-related
- clinic-related
- hospital related
- follow-up appointment

PERSONAL & INTERPERSONAL
- personal finance
- patient demographics
- patient's career
- patient's personal life
- physician's career
- physician's personal life

Table 2. Question Goals (grouped under four goal headings)

Goal	Definition
TRANSACTIONAL	**INVOLVING ENCOUNTER/VISIT PROCESS**
direction	seeks specific visit- or exam- related instructions (and **not** treatment instructions)
recollection	seeks to recall, or get the physician to recall, some information
reflection	is "thinking out loud," not necessarily looking for any response
repetition	seeks repetition of something that was said
COGNITIVE	**SEEKING FACTUAL KNOWLEDGE**
verification	seeks to check what patient already knows
clarification	seeks to clarify previously-related information
specific information	seeks specific information without further explanation, where short responses are generally the only response option
explanation	seeks more elaborate information to further own understanding
EMOTIVE	**EXPRESSING OR APPEALING TO EMOTION**
attention seeking	wants draw attention or understanding to what is being said
reassurance	seeks to know that everything is going to be all right regarding a worrisome health issue
compassion	seeks empathy/sympathy
connection	seeks to foster a personal connection with physician
indignation	seeks to "vent" anger or frustration
jest	seeks to lighten the conversation with an amusing question
nervousness	seeks only to relieve some anxiety
emphasis	asks a rhetorical question
INITIATIVE	**SEEKING TO INITIATE ACTION**
permission	seeks permission to do something
recommendation	seeks recommendation, advice, or opinion
reminder	seeks to remind the physician to do something
request	asks the physician to do something or arrange something
suggestion	offers a suggestion

Because there were many questions where the topic had to be inferred from the question's context in the dialogue, as in the second example noted above, an additional category, "Question Topic Explicitness" was included. Although not a meaningful characterization of questions on its own, this category informs the method for coding topics. This category was rated dichotomously as "explicit," where the topic was explicitly stated in the question, or "implicit," where the topic had to be inferred from the context.

"Follow-up Question" described whether the question being asked was a follow-up of a topic of a previous question or whether it was a new question about a topic that had not been asked about previously. This category was rated dichotomously as either "follow-up" or "new."

"Question Goal" described the patient's intention or what they were really seeking by asking the question. During the open-coding process, it was evident that the goal of a particular question, as in the examples above, was often subtle and complex, and often had to be inferred from the context of the dialogue. In some questions, there was clearly more than one goal. In order to account for this, an additional goal category was included, "Question Additional Goal." Ranking of goals was not intended by the two goal categories, and thus both goal categories had equal importance. During the initial open-coding process, 17 different goals were generated. Again, because of the number and variety of goals coded after listening to the first 10 interviews, this category was left open during the final coding to allow for the inclusion of any additional goals. Four new goals were added after listening to all the interviews. For subsequent analyses, the 21 goals were grouped under four descriptive goal headings--transactional, cognitive, emotive, and initiative-- all of which are listed, with brief definitions, in Table 2. These

goal headings, and several of the goals they subsume, merit further definition here.

Questions with transactional goals are those related to the process of the visit or the encounter itself. Their primary purpose is to continue the flow of the visit or the dialogue. One of these goals requires further clarification. Questions with a "direction" goal seek specific instructions only about the visit or exam and not about treatments (e.g. "Take my socks off, too?" asked during the physical exam, and not "Take this [pill] twice a day?).

Questions with cognitive goals seek factual knowledge. The four cognitive goals--verification, clarification, specific information, and explanation--were viewed on a continuum, from where the patient had prior knowledge to limited or no prior knowledge. Verification questions seek to check previously related information that the patient already knows (e.g. "I don't get no refill on that, do I?"), whereas clarification questions seek to clarify previously related information that the patient knows in part (e.g. "Do the Vanceril [inhaler] first?"). The distinction between verification and clarification was often a difficult one. Further along the continuum, specific information questions seek to gather new information that the patient does not know, but without any detailed explanation (e.g. "Oh, by the way, do you have, what was the last reading on my cholesterol, both the good and bad?"). At the other end of the continuum, explanation questions seek to gather new and elaborate information (e.g. "How come I'm putting on weight?"). The distinction between specific information and explanation questions was clearer.

Questions with emotive goals express the patient's, or appeal to the doctor's, emotions. The rating of emotive goals was often facilitated by the patient's tone of voice. A few of these goals require further clarification.

Attention-seeking questions seek to focus attention on what the patient is saying and usually end in the phrase, "...you know?" or "...you know what I mean?" (e.g. "These [joints] were really, really hot, you know?"). Reassurance questions seek to feel that everything is going to be all right regarding a personal health concern (e.g. "Is [the test] painful?") whereas compassion questions seek sympathy or empathy usually about other concerns (e.g. "*How* do you tell your child that?" asked in a despairing tone of voice).

Questions with initiative goals are action-oriented, seeking to initiate or promote some sort of action for the patient's benefit. These five goals are distinct and rather straightforward.

The "Question Tone" category described the patient's predominant emotion or attitude that was conveyed in the question and was based on voice qualities. Like "Question Goal," the tone was often subtle, complex, and multiple, but much more difficult to accurately and reliably characterize during the open-coding process. Because of this, tone was rated dichotomously as either "consonant" (i.e. the affect behind the question is agreeable, positive or in harmony with the question) or "dissonant" (i.e. the presence of any unresolved, discordant affect in the question). Dissonant questions were those in which frustration, anger, fear, worry, anxiety, or other discordant emotions were clearly and unmistakably evident. Consonant ones were those where the patient's voice sounded interested, concerned, engaged and free of any unresolved, discordant affect and tended to be the default rating when the tone was in doubt.

The "Question Order" category simply ranked a patient's questions by the chronological order in which they were asked and was used to note first and last questions.

The last question category, "Third-Party Question," noted whether the question was asked by a third-party who was accompanying the patient. Two of the ten encounters analyzed during the open-coding session had third-party persons present, and one of them asked several questions. A third-party was any person who accompanied the patient to the clinic and remained with the patient in the examination room. Members of the clinical staff were not considered third-parties.

Encounter Coding Categories

In order to explore the effects of the encounter on the questions that patients ask, the following descriptive encounter categories were included: "Third-Party Present," "Third-Party Relation," "Third-Party Gender," "Complete Recording," "Duration," "Clinic," "Nature of Presenting Problem," "First Meeting," and a set of nine "Global Affect Ratings."

Encounters in which third parties were present were problematic. In theory, these encounters could be distinctly different from those involving the patient and doctor alone. Prior research indicates that the presence of a companion does influence patients' communication behaviors [Adelman, et al., 1987; Coe and Prendergast, 1985]. Because of the anticipated confounding effect of third-parties, encounters in which they were present, even if they did not ask any questions, were excluded from this analysis. (Data from these interviews was still collected and was used to perform preliminary testing of the effect of third-parties on patients' questions, and is reported in Appendix B.) The "Third-Party Present" category coded for presence or absence of a third-party during the encounter. Additonal information about third-party identity was collected, as well. The "Third-Party Relation" category codes for the relation of the third-party person to the patient as determined by clues

from the entire dialogue, including the patient-nurse encounters. "Third-Party Gender" codes for gender based on voice clues.

Some of the tape recordings started after the interview had begun, or stopped before the interview had ended. "Complete Recording" coded whether the encounter was completely or partially recorded. If all segments of the interview were clearly present, from greeting to closing, the encounter was considered "complete" and not "partial."

"Duration" was the timed duration of the interview in minutes. Because the tape recorders were sound-activated thus pausing the recording during prolonged moments of silence, "Duration" represents an underestimate of true interview time.

Ten of the interviews were recorded during a weekly "Diabetic Foot Clinic" held at the PCC while all other interviews were recorded during general medicine clinic visits. The "Clinic" category was coded dichotomously as "Primary Care Clinic" or "Diabetic Foot Clinic."

A patient's presenting problem could be ascertained from the dialogue, as well as its chronicity, that is whether the problem was an acute or chronic one. "Nature of Presenting Problem" was coded dichotomously as either "acute" or "chronic." For those encounters in which this determination was unclear, the category was not coded. The medical chart was not reviewed to verify the coding.

After listening to an interview, it was often possible to determine if this was a first meeting between patient and provider from cues in the dialogue. The "First Meeting" category was coded dichotomously as the encounter being either a first meeting between patient and provider or not. Again, for those encounters in which this determination was unclear, the

category was not coded. The medical chart was not reviewed to verify the coding.

In order to rate the affect of the dialogue as a whole, the Global Affect Ratings from the RIAS were used [Roter, 1995]. After listening to an entire interview, affect ratings were coded for both the physician and the patient (except where indicated) for the following dimensions:

- anger/irritation
- anxiety/nervousness
- depression/sadness (patient only)
- emotional distress/upset (patient only)
- dominance/assertiveness
- interest/attentiveness
- friendliness/warmth
- responsiveness/engagement
- sympathetic/empathetic

All were scored on a Likert-type scale of "1" ("low") to "6" ("high"). For the first four dimensions, a "1" was assigned when there was no sign of the affect. For the latter five ratings, a rating of "3" to "4" was considered "average" affect, allowing for coding lower or higher affect.

Audiotape Coding Procedure

The author then listened to all taped interviews, including the 10 interviews that were analyzed in the initial open-coding, while following along on the transcripts. A Panasonic RX-C50 Stereo Cassette Deck Tuner/Amplifier with headphones was used for tape playback. Patient-nurse encounters, recorded immediately before the patient-provider encounters, were also listened to for any clues regarding the encounter variables. At the onset of each patient-provider interview, a timer was started. Each patient question was identified on the tape, transcribed verbatim into a computer database as it was heard, and then coded for each question category. The tape

deck and timer were stopped for each question, and the question was replayed as many times as needed in order to accurately transcribe and code it. Additionally, the timer was stopped during any period when the provider clearly left the examination room. At the end of each taped interview, the encounter variables were immediately coded.

A medical student fluent in Spanish was trained and employed to analyze the seven Spanish interviews using the same procedure.

Determination of the occurrence of a question consisted of either of two linguistic criteria, as proposed by Tabak [Tabak, 1988]: (1) a statement with an inverted subject-verb order (e.g. "Will exercise make it better?") or (2) a statement with a direct subject-verb order accompanied by a raised inflection at the end of the statement (e.g. "You said two, three times a day?") Only full questions, however brief, were counted. Half-formed utterances, such as "Can I...?," which then trailed off were not included. Questions that were unintelligible but clearly met the second linguistic criterion above, were included, transcribed as "unclear," but not additionally coded. Additionally, multiple-question expressions, e.g. "So I was thinking, I wonder if it has to do with the flu shot? Or my medication?", were counted as two questions only if a pause existed between questions, demarcating them. Multiple-question expressions that were strung together without pauses were regarded as only one question. Finally, those patient questions that were not directed to the provider, but rather to a third-party present in the room, were not included.

A second trained rater, a fourth year medical student fluent in both English and Spanish, followed the same procedure for 17 (20%) randomly selected interviews to determine interrater agreement for 10/11 question

coding variables[1] as well as for the 10/17 encounter variables.[2] Two of these interviews were conducted in Spanish. The second rater's training consisted of a three hour session with the author which included listening jointly to an additional taped encounter, identifying each question, and discussing its coding.

Statistical Analysis

Interrater agreement for question and encounter coding variables was determined by the Kappa and Weighted Kappa statistics [Cicchetti, et al., 1982; Cohen, 1960]. In order to assess agreement for the topic and goal categories, both of which had over 20 different coding dimensions, topics and goals were recategorized under their major headings (see Tables 1 and 2).

A rate for question-asking in each encounter was computed, in order to control for the duration of the encounter. The total duration of the encounter in minutes was divided by the total number of question asked, giving an average time interval between each question (e.g. 1 question asked every 2.2 minutes). Reporting the rate in such a fashion seemed more sensible than reporting a mean number of questions asked per minute.

Frequency counts for the question categories and measures of central tendency (mean, median, mode) for the number of question and their rates were computed. The number of questions asked and the rates at which they were asked were normally distributed.

The tabulation of the question goals was somewhat problematic given that there were two separate goal variables ("Question Goal" and "Question

---

[1] "Question Order" was excluded.
[2] "Duration," "Complete Recording," "Third-Party Relation," "Third-Party Gender," "Clinic," and two of the nine "Global Affect Ratings" that were only rated for patients were excluded.

Additional Goal"), resulting in more goals than questions. Each goal was counted separately and equally when goal tabulations were made.

For the analysis of the effects of patient, provider, and encounter characteristics on patient questions, a few adjustments were made to the patient and provider variables in order to reduce their categories. The patients' ethnicity was dichotomized into two groups: whites (white and Italian) and non-whites (African American, Hispanic, Asian, Native American, and Other). Patient income was dichotomized to low income and middle-high income groups. The providers' training status was reduced to three groups: student, resident, and attending physicians.

In additon, several variables were generated to test the effect of certain interesting patient-provider dyads. Two variables were made to identify those encounters between patients and providers concordant in gender and ethnicity. Another variable identified encounters with patient and providers nearly equal in age (<10 years of age between them) versus those that were a generation or more a part (>25 years). Finally, expecting gender to have an effect on question-asking, a female dyad variable was created to identify those encounters between just female patients and female providers.

All comparisons were made using the Pearson chi-square statistic for categorical measures and the Student's T-test and General Linear Models analysis of variance test with Duncan's multiple-range test for post-hoc testing of continuous measures. Correlations were done using the Pearson product-moment test. The SAS data management and statistical software was used [SAS, 1988].

RESULTS

Sample Characteristics

Of 112 consenting patients and 44 consenting primary care providers, 62 of their encounters were included in this study. Of the 50 encounters not included, 22 (44%) had a third-party present in the room, 6 (12%) were not recorded because of technical problems, 5 (10%) never occurred because the patient left before the provider arrived, 4 (8%) were recorded but their tape recordings were misplaced, 3 (6%) occurred only with a nurse or technician and not with the primary care provider, 2 (4%) were not recorded because the patient required emergent care, 2 (4%) were not recorded because the provider did not arrive, 1 (2%) was conducted in Vietnamese and a research assistant fluent in that language could not be obtained for the analysis, 1 (2%) involved a physician who refused to participate, and 4 (8%) for unknown reasons were not recorded.

The remaining 62 encounters represent 62 patients talking with 34 primary care providers. Most patients were over 50, female, non-white, high school but not college educated, retired or unemployed, and who described themselves as having "low" income and "average" to "good" health. They were similar to previously described PCC patient samples in regards to gender, age, and ethnicity [Fiebach and Viscoli, 1991]. Providers were mostly in their 30s, divided almost equally in gender, predominantly white, M.D. resident house staff in Internal Medicine, with "middle" income and "good" health. Patient and provider demographics, for those participating and not participating, are reported in Tables 3 and 4.

Table 3. Patient Demographics

	Participants (N = 62)	Non-participants (N = 114)[a]
Gender(%)		
Female	41 (66)	81 (71)
Male	21 (34)	33 (29)
Mean age (range)	54.9 ± 15.3 (22-82)	57.6 ± 15.6 (23-88)[b]
Ethnicity (%)[c]		
African American	30 (49)	49 (45)
White	14 (23)	22 (20)
Italian	10 (16)	8 (7)
Native American	3 (5)	5 (6)
Hispanic[d]	1 (2)	21 (19)
Asian	0	2 (2)
Other	3 (5)[e]	3 (3)[f]
Education[g]		
< High school	20 (33)	30 (60)
High school	24 (40)	12 (24)
> High school	16 (27)	8 (16)
Employment(%)[h]		
Employed	15 (26)	5 (12)
Unemployed	24 (41)	26 (60)
Retired	19 (33)	12 (28)
Income(%)[i]		
"High"	2 (3)	0
"Middle"	19 (33)	13 (28)
"Low"	37 (64)	33 (72)
Health (%)[j]		
"Good"	19 (32)	15 (29)
"Average"	24 (41)	19 (37)
"Poor"	16 (27)	17 (33)

[a] includes non-consenting patients (N = 64) plus patients whose encounters were excluded (N = 50, see preceding page).
[b] N = 50. The approximated ages of non-consenting patients were not included.
[c] N = 61 for participants; N = 110 for non-participants
[d] $p < 0.03$
[e] includes "West Indian," "other," and "all of the above"
[f] includes "East Indian," "French," and "Polish"
[g] $p = 0.02$. N = 60 for participants; N = 50 for non-participants
[h] N = 58 for participants; N = 43 for non-participants
[i] self-rated measure. N = 58 for participants; N = 46 for non-participants
[j] self-rated measure. N = 59 for participants; N = 51 for non-participants

Table 4. Provider Demographics

	Participants (N = 34)	Non-participants[a] (N = 9)
Gender (%)		
Female	16 (47)	4 (44)
Male	18 (53)	5 (56)
Mean age (range)[b]	31.8 ± 8.3 (24-66)[c]	28.0 ± 3.5 (24-34)
Ethnicity (%)[d]		
White	24 (71)	5 (63)
Asian	3 (9)	0
Hispanic	2 (6)	0
African American	1 (3)	0
Italian	1 (3)	1 (13)
"Jewish"	1 (3)	1 (13)
Other	2 (6)[e]	1 (13)[f]
Terminal Degree (%)		
M.D.	24 (71)	5 (56)
M.D./Ph.D.	3 (9)	1 (11)
M.S.N.	2 (6)	0
M.D. (expected)	2 (6)	1 (11)
M.D./Ph.D. (expected)	2 (6)	2 (22)
M.D./M.P.H. (expected)	1 (3)	0
Training Level (%)		
Medical Student	5 (15)	3 (33)
Medical Resident	21 (62)	4 (44)
Medical Fellow	0	1 (11)
Medical Attending	6 (18)	1 (11)
Nurse Practitioner	2 (6)	0
Area of medical specialization (%)[g]		
Internal Medicine	22 (92)	5 (100)
Tropical Med./Rheumatology	1 (4)	0
Endocrinology	1 (4)	0
Mean duration of service at current hospital in years (range)	3.7 ± 5.5 (0.9-32.0)[h]	2.9 ± 1.5 (1-5)
Income(%)[i]		
"High"	6 (19)	0
"Middle"	18 (56)	5 (56)
"Low"	8 (25)	4 (44)
Health (%)[j]		
"Good"	32 (97)	7 (78)
"Average"	1 (3)	2 (22)
"Poor"	0	0

[a] Non-participating providers are those who consented but their encounters were excluded (see opening of this section for exclusion criteria).
[b] $p < 0.05$
[c] N = 33
[d] N = 8 for non-participants
[e] includes "Armenian" and "German"
[f] includes "Indian"
[g] N = 24 for participants; N = 5 for non-participants
[h] N = 32
[i] N = 32 for participants
[j] N = 33 for participants

Participating patients were represented by fewer Hispanics than non-participating patients (1/61, 2%, versus 21/110, 19%; $\chi^2 = 14.3$, $df = 6$, $p < 0.03$), and were more educated ($\chi^2 = 7.8$, $df = 2$, $p = 0.02$). Participating providers were older than their non-participating colleagues (31.8 ± 8.3 years versus 28.0 ± 3.5 years; $t = 2.0$, $df = 32.8$, $p < 0.05$).

Comparing participating patients and providers, on the whole providers were a generation younger (31.8 ± 8.3 years versus 54.9 ± 15.3 years; $t = 9.5$, $df = 92.9$, $p < 0.001$), were represented by more males (18/34, 53% versus 21/62, 34%; $\chi^2 = 3.3$, $df = 1$, $p < 0.07$), more whites (24/34, 71% versus 14/61, 23%; $\chi^2 = 40.2$, $df = 7$, $p < 0.001$) less African Americans (1/34, 3% versus 30/61, 49%; $\chi^2 = 40.2$, $df = 7$, $p < 0.001$), and described themselves as having higher incomes (24/32, 75% with "middle" or "high" incomes versus 21/58, 36%; $\chi^2 = 14.4$, $df = 2$, $p = 0.001$), and better health (32/33, 97% with "good" health versus 19/59, 32%; $\chi^2 = 36.0$, $df = 2$, $p < 0.001$).

Interrater Agreement

A second rater identified 121 questions in the 17 interviews used to determined interrater question coding agreement. The author plus the original rater who analyzed the Spanish interviews had identified a total of 151 questions. Eighty-nine questions were identified in common. For these identical questions, interrater agreement for 10 of the question categories is reported in Table 5. Four categories--"Question Topic,"

Table 5. Kappa values for interrater agreement in question coding categories (agreement significance)[a]

Question Topic	0.63 (good)
Question Topic Explicitness	0.37 (poor)
Question Topic Originator	0.19 (poor)
Follow-up Question	0.20 (poor)
Question Goal	0.62 (good)
Question Additional Goal	0.14 (poor)
Question Timing	0.97 (excellent)
Question Endedness	0.25 (poor)
Question Tone	0.07 (poor)
Third-Party Question	1.00 (excellent)

[a] Kappa values are given the following agreement significance: < 0.40 = poor; 0.40-0.59 = fair; 0.60-0.74 = good; and 0.75-1.00 = excellent

"Question Goal," "Question Timing," and "Third-Party Question"-- achieved an interrater agreement of "good" or better. Subsequent analyses focused primarily on the first two of these categories, question topics and goals, and the author's ratings were used.

Interrater agreement for the encounter variables was "excellent" for rating whether the encounter represented a first meeting between physician and patient ($\kappa = 0.88$) and the presence of a third party ($\kappa = 1.00$). Agreement was "poor" for judging the nature of the presenting problem (i.e. whether it was acute or chronic; $\kappa = -0.01$) and for all the global affect variables (κ range = -0.01 - 0.26).

Table 6. Characteristics of patient-provider encounters (N = 62)

Number of encounters that were completely recorded (%)	49 (79)
Mean duration in minutes of interviews that were recorded...	
...completely (range)	16.4 ± 9.8 (2.7-55.8)[a]
...partially (range)	17.6 ± 11.4 (4.8-39.0)[b]
Type of clinic in which encounters occurred (%)	
Primary care clinic	60 (97)
Diabetic foot clinic	2 (3)
Nature of patients' presenting problems (%)[c]	
Acute	18 (30)
Chronic	42 (70)
Training level of providers (%)	
Student	5 (8)
Resident	36 (58)
Attending	17 (27)
Nurse practitioner	4 (7)
Number of first meetings between patient and provider (%)	18 (32)[d]
Mean difference in age of patient-provider dyads (range)	20.9 ± 15.0 (-16-53)[e]
Number of discordant patient-provider dyads in terms of...	
...ethnicity (%)	46 (75)[f]
...gender (%)	32 (52)
...perception of income (%)	32 (56)[d]
...perception of health (%)	36 (68)[g]

[a] N = 49 [b] N = 13 [c] N = 60 [d] N = 57 [e] $p < 0.01$ [f] N = 61 [g] N = 53

Encounter Characteristics

The characteristics of the patient-provider encounters are summarized in Table 6. About four out of five of the interviews were recorded completely, from greeting to closing, lasting between 16 to 17 minutes. Almost all of the encounters took place in a primary care clinic, involving patients with predominantly chronic problems who were seen in large part by resident house staff and attendings. About one third of these encounters represented first meetings between the patient and the provider. In examining these patient-provider dyads, there was notable discordance in terms of age and ethnicity. The difference in age averaged almost 21 years (paired comparison: $t = 10.9, p < 0.001$), and in three out of every four encounters, the patient and the physician were of different ethnic backgrounds.

Differences in affect in patient-provider dyads, as measured by the Global Affect Rating scale, are reported in Table 7. Paired comparisons showed providers as significantly less anxious ($t = 2.9, p < 0.01$), more dominant ($t = -5.6, p < 0.001$), more interested ($t = -4.8, p < 0.001$), more friendly ($t = -4.0, p < 0.001$), more responsive ($t = -4.0, p < 0.001$), and more sympathetic ($t = -4.4, p < 0.001$) than their patients during the encounters. However, because the Global Affect Rating scale measures had poor interrater agreement, they were not used in subsequent analyses.

Table 7. Mean difference in Global Affect Ratings for patient-provider dyads (patient score minus provider score, N = 62)

Anger/irritation	0.0 ± 0.5
Anxiety/nervousness	0.3 ± 0.8^{a}
Dominance/assertiveness	-0.8 ± 1.1^{b}
Interest/attentiveness	-0.4 ± 0.7^{b}
Friendliness/warmth	-0.4 ± 0.7^{b}
Responsiveness/engagement	-0.4 ± 0.7^{b}
Sympathetic/empathetic	-0.4 ± 0.7^{b}

$^{a}p < 0.01$ $^{b}p < 0.001$

Characteristics of Patients' Questions

The Number of Questions

Eight hundred patient questions were identified in the 62 interviews (all questions are listed in Appendix A, including "Chicken pot pie?"). The mean number of questions asked per encounter was 12.9 ± 12.2 (range = 0 - 55; median = 7.5; mode = 4). There were only two encounters in which no questions were identified. Patient question-asking occurred at a rate of 1 question every 2.0 ± 1.4 minutes (range = 0.3 - 5.9). Both measures, the number and rate of questions, were represented by normal distributions.

The Topic of Questions

Question topics are presented in Figure 2. The majority of questions were either about medications (182/778, 23%), the logistics of the visit (120/778, 15%), or were personal or interpersonal questions (116/778, 15%). Almost all of the medication questions were about the medication plan (146/182, 80%) and not about medication side-effects (16/182, 9%), therapeutic effect (11/182, 6%), or purpose (9/182, 5%). Nearly half of the visit logistics questions had to do with the physical examination (e.g. "Do I need to take off my shirt?") (51/120, 43%), and over half of the personal and interpersonal questions were about the provider's personal life (60/116, 52%).

Patients asked few questions about health risks, disease prevention and disease prognosis (50/778, 6%) and even fewer about matters of diagnosis, disease etiology, and pathophysiology (44/778, 6%). Of all the questions identified, only 18 were about issues of diagnosis (2%), and only 1 question was about disease prognosis (0.1%).

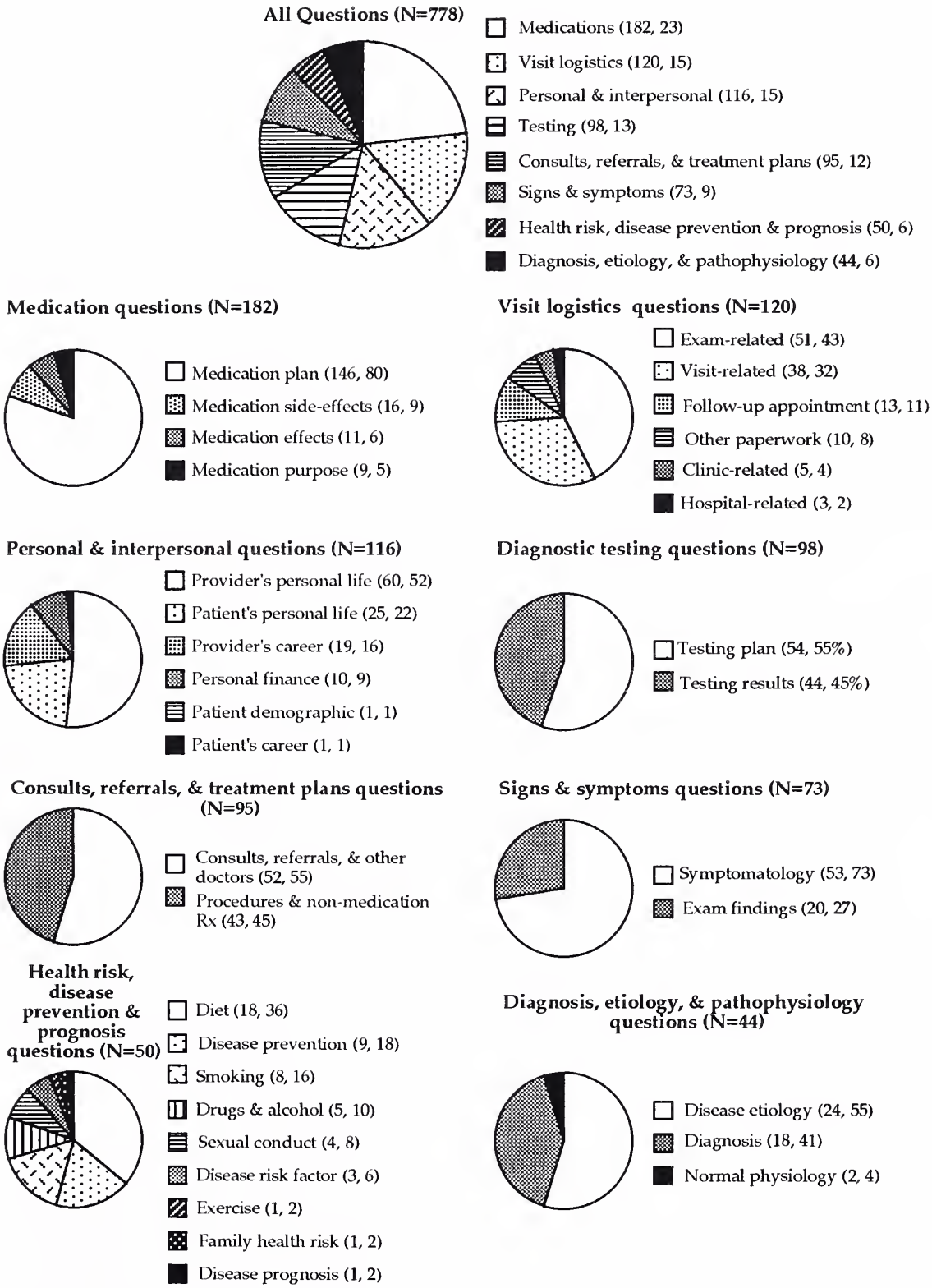

Figure 2. Question topics (number of questions, %). The eight major topic categories are depicted in the larger pie chart at the top, center. Below it, the smaller pie charts represent itemizations of the topics under each major topic category.

For most questions, the topic was not explicit in the question (515/781, 66%). In other words, most of the topics were unclear from the questions themselves and had to be determined by contextual clues within the dialogue (see Appendix A).

The topics of patients' questions were originated more often by the providers than by the patients themselves, as depicted in Figure 3. When patients did originate the topic, which happened in almost two out of every five questions, the questions were more about personal and interpersonal matters--specifically personal questions about the physician--and less about medications ($\chi^2 = 77.4, df = 7, p < 0.001$).

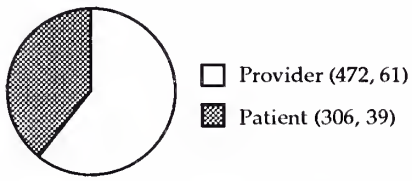

Figure 3. Who was the originator of the question topic? (number of questions, %) N=778

Many of the questions were follow-ups of previously asked questions (334/775, 43%). Follow-up questions were those that further pursued a topic that the patient had asked about already. Most follow-up questions were about medications (93/334, 28%), specifically about the medication plan (80/93, 86%).

The Goal of Questions

Question goals are presented in Figure 4. About half of all question goals were cognitive ones, that is, the intent was to further the patient's factual knowledge. Most of the questions with cognitive goals were seeking verification of previously related information that the patient already knew (231/505, 46%) and clarification of previously related information that the patient knew in part (137/505, 27%). Less often was it the patient's intent to

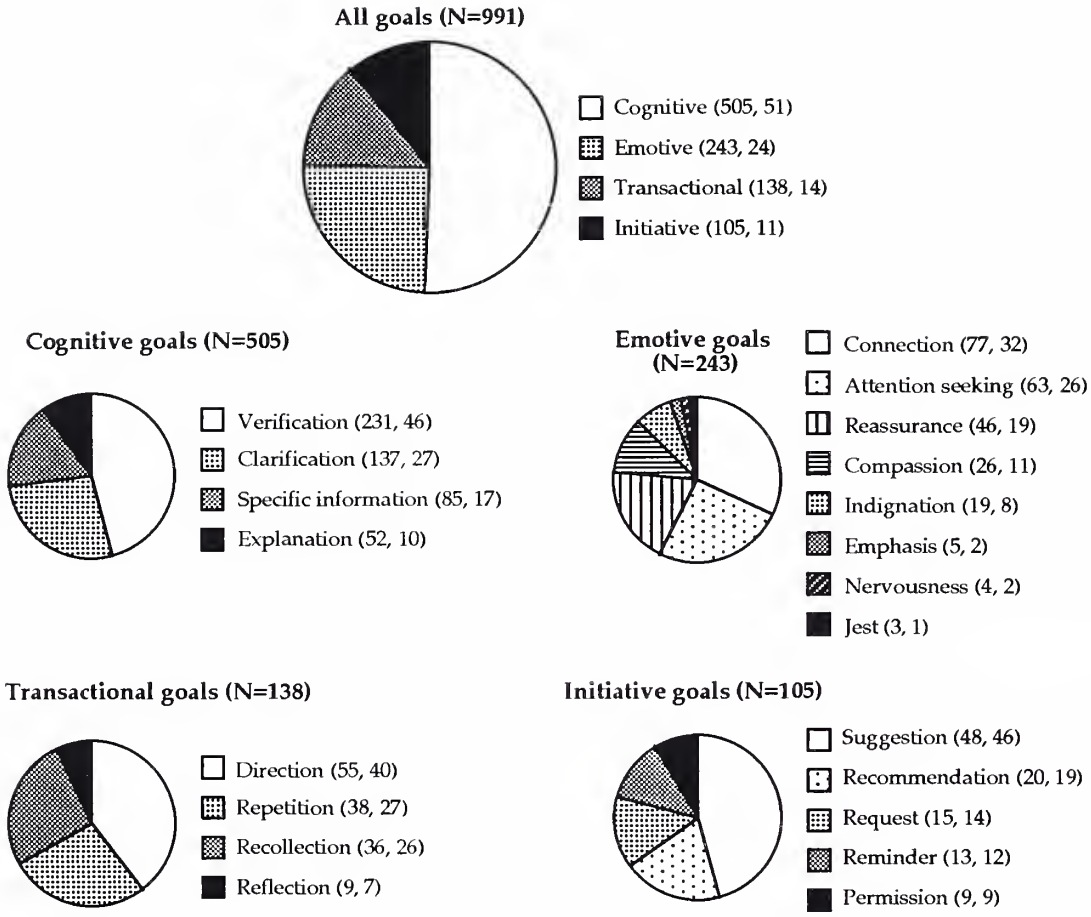

Figure 4. Question goals (number of goals represented in questions, %). The four major goal categories are depicted in the larger pie chart at the top, center. Below it, the smaller pie charts represent itemizations of the goals under each major goal category.

gather factual knowledge in the form of specific information (85/505, 17%) or explanation (52/505, 10%).

One quarter of the goals were emotive, that is expressing the patient's, or appealing to the doctor's, emotion. Connection and attention-seeking goals accounted for most of the emotive goals (77/243, 32% and 63/243, 26% respectively), followed by reassurance (46/243, 19%), compassion (26/243, 11%), and indignation (19/243, 8%). Questions that sought to make a personal connection with the provider were almost as common as those that gathered specific information.

Patients had fewer transactional or initiative goals for their questions. Questions with transactional goals, i.e. those related to the process of the visit or encounter, consisted mostly of patients seeking directions about what they were to do during the visit or the physical exam and asking the provider for repetition. Many of the questions with initiative goals, i.e. those that seek to initiate or promote some action for the patient's benefit, were suggestions disguised as questions. Questions offering the doctor a suggestion were more common in this group than questions asking for the doctor's recommendation (48 versus 20/105, 46% versus 19% respectively). In fact, offering a suggestion was a more common question goal than asking for reassurance and almost as common as asking for an explanation.

About one quarter of all questions were noted to have an additional goal (207/784, 26%). The most common combination of goals was seeking specific information while fostering personal connection with the physician (12/207, 6%), seeking clarification while looking for reassurance from the physician (11/207, 5%), and seeking clarification and drawing attention from the physician (11/207, 5%). All three represent combinations of cognitive and emotive goals.

Other Characteristics of Questions

Over three quarters of all patients questions were asked during the history or discussion and plan phases of the clinical interview, as shown in Figure 5. The very last question that patients asked was most often about medications (12/49, 25%) and diagnostic testing (10/49, 20%).

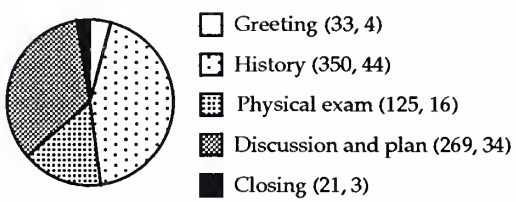

Figure 5. When do patients ask questions in clinical interview? (number of questions asked, %) N=798

One out of every five questions was open-ended (150/783, 19%). Open-ended questions were more often those in which the patient had originated the topic of the question (76/306, 25%; $\chi^2 = 9.8$, $df = 1$, $p < 0.01$) and questions about diagnosis, disease etiology and pathophysiology (19/44, 43%; $\chi^2 = 44.9$, $df = 7$, $p < 0.001$).

Patients occasionally asked "dissonant" questions, where negative affect was clearly detected in the tone of voice (112/788, 14%). Dissonant questions were more often those in which the patient had originated the topic of the question (54/306, 18%; $\chi^2 = 4.7$, $df = 1$, $p < 0.04$) and questions about diagnostic testing (22/98, 22%; $\chi^2 = 14.4$, $df = 7$, $p = 0.05$). Fewer dissonant questions were asked during the physical exam and closing segments (10/121, 8% and 0/21, 0% respectively; $\chi^2 = 10.4$, $df = 4$, $p < 0.04$). Last questions were rarely dissonant (2/49, 4%; $\chi^2 = 4.5$, $df = 1$, $p < 0.04$).

The Effect of Patient, Provider, and Encounter Characteristics on Questions

The following dependent variables of interest were investigated: the number of questions asked per encounter, the rate of question-asking, the major question topic, and the major question goal. Based on the finding that there were much fewer questions on some topics than others, an additional variable was tested. The eight major question topics were dichotomized into "less-asked" topics (i.e. health risks, disease prevention and disease prognosis and diagnosis, disease etiology, and pathophysiology) versus the other topics.

Gender:

Although slightly more questions were asked, and at a slightly more frequent rate, to female providers and by female patients, these results did not achieve statistical significance. When female patients were talking with

female providers, the number questions asked by the patients was slightly increased, although the rate of question-asking was the same as for other dyads. The interviews with female dyads were significantly longer in duration (over 8 minutes longer) than the interviews of other dyads ($t = 2.6$, $df = 21.8$, $p < 0.02$).

Gender did have an effect on the topics and goals of the questions asked by patients. Questions about medication topics were asked more often by females than males (160/548, 29% versus 22/230, 10%; $\chi^2 = 40.9$, $df = 7$, $p < 0.001$). However, medication questions were asked more often to male providers than female providers (123/393, 31% versus 59/385, 15%; $\chi^2 = 37.2$, $df = 7$, $p < 0.001$). When patients and providers were of the same gender, patients' questions were more often about personal and interpersonal matters ($\chi^2 = 26.8$, $df = 7$, $p < 0.001$), with more emotive goals ($\chi^2 = 36.4$, $df = 3$, $p < 0.001$), than when there was gender discordance.

Educational and Socioeconomic Status:

The patient's educational background, employment status, and income level had no effect on the number and rate of questions being asked, although a correlation trend was noted for more questions being asked with increasing educational level ($r = 0.23$, $p < 0.07$).

No effects of these patient variables were noted on question topics and goals.

Age:

The patients' ages were found to correlate with the rate of question-asking in the encounter ($r = -0.29$, $p < 0.03$). The direction of the correlation indicates that increasing age is associated with decreasing intervals between

questions, i.e. increasing age is associated with increasing frequency of question-asking. Likewise, a trend was noted between the providers' ages and the frequency of question-asking ($r = -0.24, p < 0.07$).

The "less-asked" question topics were inquired about more often by younger patients ($t = -3.3, df = 776, p < 0.001$). No other age effects on question topics or goals was found.

Ethnicity:

The ethnicity of the patient had no effect on the number and rate of patients' questions. However, like gender, it did effect the topics and goals of questions. When patients and providers were of the same ethnic group, patient questions were more often about personal and interpersonal matters ($\chi^2 = 54.4, df = 7, p < 0.001$) with the goal of the questions being more emotive ($\chi^2 = 30.3, df = 3, p < 0.001$) than when there was ethnic discordance.

Doctor's Level of Training:

The doctor's level of training had no effect on number or rate of patient questions. Although patients on average tended to ask more questions with medical students and less with residents and attendings, question-asking occurred at a more frequent rate during encounters with attendings. This was a function of the duration of the visit: student interviews were significantly longer than resident and attending interviews ($F = 13.0, df = 2, p < 0.0001$).

There were several effects of training level on the topics and goals of patients' questions. Students were asked more questions about the "difficult" topics ($\chi^2 = 9.0, df = 2, p < 0.02$) and received more questions with transactional goals ($\chi^2 = 36.1, df = 6, p < 0.001$). Attendings, on the other hand, were asked more questions about personal and interpersonal topics ($\chi^2 =$

110.5, $df = 14$, $p < 0.001$) and received more questions with emotive goals ($\chi^2 = 36.1$, $df = 6$, $p < 0.001$).

First Meetings Between Patients and Providers:

First meetings between patients and providers had no effect on the number and rate of questions being asked by patients. However, patients asked fewer questions about personal and interpersonal matters ($\chi^2 = 34.0$, $df = 7$, $p < 0.001$) during initial encounters.

DISCUSSION

Consideration of the Methodology

The development of a methodology to characterize the questions patients ask relied on a qualitative approach. Using a subset of tape recorded interviews, the author listened to patient-doctor conversation, identified each question asked to the doctor, and contemplated its description. This open-ended process -- open-coding -- proved manageable and high-yielding. New concepts were generated, and previously-derived ones were enhanced.

Open-coding was a simple and manageable process that revealed new ideas. The two analytic procedures -- *the asking of questions* and *the making of comparisons* -- helped the author to see patient questions from different perspectives. That the procedure was open-ended might suggest an unlimited and unmanageable number of possible outcomes. But in fact, a limited and manageable number of categories and their properties were developed. After listening to only ten interviews, no new categories were emerging and their multiple properties were diminishing.

These eight original question-coding categories that were generated may prove to be valid and useful measures. The "Question Goal" category was the most compelling. Characterizing questions by their intent had not been done previously, to the author's knowledge. Twenty different goal properties emerged in the coding process. Although some clearly are overlapping, like "verification" and "clarification," they offer a novel, meaningful, and potentially useful characterization of what patients might be seeking when asking a question.

The qualitatively-derived method expanded previous concepts, including the number and topic of questions. Because the number of questions was dependent on the duration of the interview, the methodology incorporated a rate of question-asking to control for the effect of time. The coding of question topics was substantially expanded. Previous studies employed either seven to eight topic areas. The open-coding procedure generated 38 possible topics. Although there is some overlap among them, these individual topics added considerable detail to the analysis. Furthermore, these multiple topic areas could be grouped under eight major topic headings, making them more amenable to statistical analysis.

To assess the methodology, interrater agreement was determined, and the results were mixed. First, simply identifying whether or not a question was asked proved difficult. The author identified 25% more questions in the encounters than did the second rater. However, the second rater still identified 30 questions that the author did not. For those questions identified in common, the coding of questions was marked by widely varying agreement. There was little difficulty judging the phase of the interview when questions were asked, or whether a third party had asked the question. Other question-coding categories were extremely difficult to rate reliably, including the originator of the question topic, the tone of the question, and the open-or closed-nature of questions. Of note, among the encounter variables, the measurement of patient and provider affect by Roter's Global Affect Rating Scale had poor agreement.

There are many possible explanations for these disagreements. First, the raters were not equally trained and invested in the project. The author had developed the methodology over a period of weeks while the second rater had only three hours of training to become familiar with it. Although

the raters were using an operational definition of a question, one previously employed by another investigator [Tabak, 1988], still there was a high degree of subjectivity in the question identification process. For example, many questions were statements ending with raised inflection. Clearly, there were varying degrees of raised inflection, which made it difficult to know whether a question was really being asked. Furthermore, one of the taped recordings used for interrater agreement was of poor quality, which was reflected by increased disagreement in question identification.

On those questions where the raters did agree, the rating of several question-coding variables was simply too subjective. Judging the tone of questions, even though the category was dichotomized into "dissonant" and "consonant," relied on the rater's interpretation of subtle voice cues. The open-closed nature of questions -- a seemingly easy distinction to make -- proved equally fallible to rater subjectivity. What one rater perceived as a question requiring a brief one- or two-word answer, the other rater often perceived as a question requiring an elaborate response. The assessment of the question topic originator was difficult, as well, because it required following the entire conversation closely and remembering who (the doctor or the patient) had introduced each topic. Memory was also required to determine if a question was a follow-up question; the rater had to recall those topics that the patient had previously asked about. Interrater agreement was particularly poor in determining the additional goal, if any, of a question. The disagreement between raters was largely over whether or not questions had an additional goal at all. When the raters concurred on the presence of an additional goal, they agreed on the specific goal 75% of the time.

Despite these disagreements, two of the four question-coding categories that achieved "good" or better interrater agreement merit special attention.

The topic of questions could be rated reliably, despite the fact that the topic was not always explicit in the question itself. For the majority of questions, the topic had to be inferred from the context. It is significant, then, that the agreement between raters was good. Moreover, assessing the goal of a question, which in theory would include a greater degree of rater subjectivity, could be done reliably. The interrater agreement for the topics and goals categories was a major accomplishment of the study. These two categories were arguably the most descriptive and compelling of all the categories to characterize patient questions. Both had been newly derived from qualitative methods, and both deserve further attention.

There are three important implications of the development and assessment of the methodology employed in this study. First, qualitative approaches can be used, with ease and efficacy, to generate substantive and novel concepts, as well as to enhance those previously developed. In this investigation, open-coding procedures served to develop two important and potentially useful descriptors of patient questions: question topics and question goals. Second, there is much room for improvement. To begin with, a less subjective definition of what constitutes a question is needed. Several question coding categories need to be refined or dropped. The most important of these, which have been used by previous investigators, are question topic originator and question endedness. The current study could not rate them reliably, and thus did not focus on them. Third, the process of developing this methodology ultimately highlights the complexity and subtlety of patient question-asking. Two raters, relatively focused and single-minded on identifying questions and characterizing them, still had numerous disagreements. These disagreements point to the elusive character of patient questions, that they are not easily identified, nor easily described.

Limitations of the Test Sample

The methodology was then tested in a sample of patient-provider encounters. These encounters took place in the general medicine clinic of a large, university-based hospital. The vast majority of these encounters represented routine primary care visits. Patients tended to be older, female, non-white, at best high school educated, and retired or unemployed. Their providers, on the other hand, were a generation younger, divided equally in gender, predominately white, M.D. resident house staff training in Internal Medicine. This sample of patients and providers was marked by disparities between the two groups.

Given this unique setting and sample, the *findings* are limited in the extent to which they can be generalized. They cannot be applied to other clinical settings like, for example, specialty clinics or suburban private practice offices. Moreover, the sample that was tested is not representative of most other patient and provider populations. At best, the results may have some implications for other inner-city adult primary care centers or teaching centers. However, the *method* and its implications can be generalized. The process in which it was developed can apply widely to other settings and sample populations.

The Number and Rate of Questions

The patients in this sample asked on average over 12 questions per visit, at a rate of 1 question being asked every 2 minutes. The number and rate of question-asking was not effected by gender of the patient or the provider, nor the patient's educational or socioeconomic status. The age of

the patient was found to be associated with an increased frequency of question-asking.

The present study could not replicate previous findings of gender, educational, and socioeconomic effect on the number of questions asked by patients. The small size of the sample and its predominant representation by females with limited education, precludes what these analyses are able to show. However, the finding of an age effect on the rate of question-asking serves to refocus some attention on the controversial effects of age in the medical encounter [Beisecker and Beisecker, 1990; Butow, et al., 1994; Street, et al., 1995].

The patients in this sample asked 2-4 times more questions than patients in previously reported samples (see Figure 1). Contrary to earlier findings that many patients do not ask any questions at all during the clinical encounter [Beisecker and Beisecker, 1990; Roter, 1977; Roter, 1984], only 2 patients here refrained from question-asking. Given that the patient sample was characterized by predominantly lower levels of education and socioeconomic status, the results were surprising and intriguing. Investigators have reported that this population of patients asks few questions [Hall, et al., 1988; Shapiro, et al., 1983; Street, 1992; Street, et al., 1995]. Yet the patients in this study, while most comparable to Roter's sample of inner-city community health clinic patients, asked over three times more questions during their primary care visits than did Roter's patients.

Explaining this unexpected increase in question-asking behavior is difficult. First, it is unclear whether the duration of the visit was a factor. Only two previous studies timed their encounters. The rate of question-asking in this study is still faster than rates the author computed for these studies: 1 question every 2.7 minutes [Thompson, et al., 1990] and 1 question

every 4.2 minutes [Greenfield, et al., 1985]. The increased rate of question-asking is in part attributable to the use of sound-activated tape recorders. Since the duration of the visit was based on the timing of the *taped* encounter, the timed duration would underestimate the actual duration in those interactions marked by periods of silence.

Second, the method of identifying questions may account in part for the increase. In this analysis both statements with an inverted subject-verb order plus statements that ended in raised inflection were counted as questions. The one investigator who had identified questions with this method [Tabak, 1988] had reported the highest mean number of patients' questions asked with the greatest amount of variation (5.6 ± 6.5 question per visit; see Figure 1). Other investigators, who neglected to specify how they identified questions, may not have used as inclusive a method.

Third, sample selection bias may have been a factor as well. Patients were recruited knowing that they would be participating in an investigation of "communication between healthcare providers and patients." This invitation may have selected for those patients who were more communicative and tended to ask more questions. Less communicative patients may have chosen not to participate. In fact, at least 24 patients (38% of those who refused to participate) had a communications-related problem (i.e. either not understanding the research assistant's request, or a language barrier). Previous studies did not report on how their samples were recruited and may not have introduced this element of selection bias into their results. Furthermore, these same studies did not report how they handled interactions in which third parties were present. All 22 of these doctor-patient-third party interactions were excluded from this analysis. Patients in these interactions asked significantly less questions (see Appendix B). Their

inclusion would have lowered the overall mean to around 11 patient questions asked per visit. This number, though, is still high.

Another explanation for the increase is observer bias. It was the author's question counts that were used in the calculations. These counts may be inflated. As has been noted, the author identified many more questions per interaction than a second rater.

The Topics and Goals of Questions

The majority of questions asked by patients in this sample were either about medications, the logistics of the visit, or were personal or interpersonal questions. Patients asked relatively few questions about health risks, disease prevention and prognosis and even fewer about matters of diagnosis, disease etiology and pathophysiology.

About half of all question goals were cognitive ones, that is, the intent was to further the patient's factual knowledge. Most of the questions with cognitive goals were seeking verification of previously related information that the patient already knew and clarification of previously related information that the patient knew in part. Less often was it the patient's intent to gather new knowledge in the form of specific information or explanation. One quarter of the goals were emotive, that is expressing the patient's, or appealing to the doctor's, emotion. Connection, attention-seeking, and reassurance accounted for most of the emotive goals.

Both gender and ethnicity had similar and curious effects on the topics and goals of patient questions. When patients and providers were of the same gender or ethnicity, the questions were more often about personal and interpersonal matters, with more emotive goals, than when there was gender or ethnic discordance.

These results reinforce and expand earlier findings that general practice patients ask mostly about "non-medical" topics and medications and rarely about matters of diagnosis and prognosis [Roter, 1977; Roter, 1984]. This analysis may offer an insight into what the oft-asked "non-medical" questions were that Roter reported. Patients asked a large number of personal and interpersonal questions, the majority of which were about the provider's personal life. This inclination to ask the doctor personal questions may in part be an effect of the time of the year when the data for this study was collected, early June. This is traditionally the month when some residents are preparing to depart their training programs and patients. The author was aware while listening to the taped interactions that some of the patients and their doctors were in the process of termination. Personal and interpersonal issues, as well as a host of other issues, may have been accentuated at this time [Lichstein, 1982].

Patients' Questions and the Nature of Patient Participation

The amount of patient question-asking in this sample is provocative in what it may imply about patient participation. The result might suggest that either patients are no longer as passive as once thought, or that patient participation, as defined, is misunderstood. Previous investigators have nearly equated patient participation within the medical encounter with patient question-asking, specifically *the number* of questions asked [Greenfield, et al., 1985; Roter, 1984; Roter, et al., 1987]. In fact, this is the underlying assumption of the interventional studies: if you can get the patient to ask more questions, then you have achieved greater patient participation. Patients in this sample were certainly participatory. But how

did they participate? The number of questions that patients ask cannot adequately answer this question.

There is a pattern to the topics of patients' questions that may elucidate the nature of patient participation in these medical encounters. The topics about which patients frequently asked -- medications and the logistics of the visit -- were issues about which patients may have relatively more knowledge and control. The topics about which they rarely asked -- health prevention, risk factors, prognosis, diagnosis, etiology, and pathophysiology -- tend to be issues beyond the patient's domain, and more in the realm of the doctor. This pattern repeats itself among the medication subtopics: patients asked mostly about the plan, something over which they might have more control, and rarely about the therapeutic effects or purposes of medications, topics about which they may perceive the doctor to know more than they. Patients tended not to ask about those topics that they may have perceived to be outside of their domain, instead trusting their doctors' expertise and judgment in these areas.

The analysis of the goals of questions may reinforce this notion that patients stay "close to home" in their question asking, rarely venturing out to obtain new knowledge. Although half of all the question goals were cognitive ones, the majority of these questions sought verification or clarification, checking what they already knew. Less often, the patient sought specific information and rarely explanations from their questions. Furthermore, among the questions with initiative goals, the offering of a suggestion by asking a question was the most common. There were more of these suggestion-type questions than questions seeking the provider's recommendations. Again, this same pattern appears: patients asking

questions about what they already think or know, as opposed to seeking new information from their doctors.

However, there may be an interesting exception to this pattern. Patients often asked about personal and interpersonal matters, and most of these questions were about their providers' lives. Patients more frequently originated these personal topics in their queries than other topics. Why patients were asking these personal questions cannot be known for sure. Perhaps, the questions may represent attempts to bond or connect with the physician, or to divert or sidetrack the conversation away from medical matters and their own healthcare concerns. The finding that these personal and interpersonal questions occurred more often when patients and providers were of the same gender or ethnicity may suggest that these question represent an underlying desire to connect and be known more personally.

In short, the patients in this sample may display an underlying tension in patient participation in the doctor-patient relationship. To understand more about the nature of this participation, one needs to look beyond the number of questions patients are asking. The *patterns* within these questions, namely their topics and goals, may provide important clues as to *how* patients participate. The patients in this survey asked more questions that seemed in their domain, verifying and clarifying things they already knew. They rarely sought new information or explanations. However, the numerous personal and interpersonal questions, especially those about their providers' lives, may suggest an underlying drive for connection in the doctor-patient relationship.

Implications for Clinical Practice and Suggestions for Further Research

There are three implications for clinical practice that may be drawn from this study. First, construing the meanings and intents of questions that patients ask can be quite complicated. This was true in this study and may be true, as well, in the clinical setting. Second, the goals of patients' questions were often emotive. Physicians need to recognize that a large number of patient questions may not be requesting any information at all, but are seeking an empathic response. Third, this study offers a challenge to clinicians to encourage their patients to seek new information and more explanation from the questions they ask.

This analysis also offers three directions for further research. First, the role of third parties in the medical encounter should be explored further. The preliminary analyses in this study (see Appendix B) indicate some confounding effects on patient question-asking that deserve to be recognized and controlled for in future studies. Doctor-patient interactions in which third parties are present appear to be distinctly different from those in which the patient and the doctor are alone.

Second, phenomenology can and should inform interventional research. This study offers some suggestions to investigators that seek to manipulate patient question-asking in particular, and patient participation in general. Previous research, as reviewed, has relied almost exclusively on determining the effect of interventions by the number of questions that patients ask. Further studies should incorporate not only a rate of question-asking, but also a multi-dimensional question-coding system, like question-topics and goals. It would be important to know if the interventions can effect not only the number of questions and the rate at which they are asked,

but the content and intention of questions as well. In particular, encouraging patients to ask the "less-asked" topics, and helping them to obtain specific information and explanation from their doctors may be better indicators of increased patient participation in the medical encounter.

Finally, research into what patients are asking ultimately should be coupled with research into how physicians are responding. Qualitative approaches could serve to elucidate this central dynamic -- questions *and* answers -- in the doctor-patient relationship.

Summary

- Qualitative approaches can be used to develop methodologies to further characterize specific aspects of the medical dialogue, like patient question-asking.
- In this investigation, the methodology generated two important and potentially useful descriptors of patient questions: question topics and question goals.
- Patients in this sample asked over 12 questions per encounter, 2-4 times the averages previously reported.
- Most patient questions were about medications, the logistics of the visit, or were personal or interpersonal questions. Few questions were about health risks, prevention and prognosis and even fewer about matters of diagnosis, disease etiology and pathophysiology.
- Most question goals were cognitive, largely seeking verification or clarification and rarely specific information or explanation. Emotive goals were common.

APPENDIX A. The Questions.

- What?
- Why?
- I guess that's where they do it, where they do all the x-rays and stuff?
- One time last in, when this, when I came to the emergency room and I was, uh, having it constantly, you know, once every month, this was what was going on?
- You do?
- Are we going to see if the one for the 24th comes back, or what, or are we going to wait?
- This is the blood pressure, right?
- Uh, not too bad since you told me to take that glass of prune juice every night?
- You know how many times you gotta get up during the night to empty your bladder?
- Could that possibly bring up my blood pressure like that?
- What's that, uh, for, uh?
- What the hell was it?
- They did?
- I went to see, uh, you know, her name is M.S. [doctor's name]?
- Remember when I was here before, I told you I needed to see one?
- Oh you have?
- July appointment?
- How's your new baby?
- What did you have?
- What was the first one?
- Oh well, you're not going to send him back are you?
- What was it?
- Oh, by the way, do you have, what was the last reading on my cholesterol, both the good and bad?
- What?
- Good morning, Dr. S. [doctor's name], how are you?
- You're looking good, how's everything?
- Is it on?
- Is it on?
- Can you write a refill on this?
- You see when that was?
- I'm not sure if it does or doesn't, you know?
- How come I'm putting on weight?
- But I'm still gaining weight, why?
- Who's going on sabbatical?
- Oh, Ecuador, you're going?
- Is it out in the woods or it is it...?
- Quito, that's not Ecuador, Quito?
- When are you leaving?
- Are you going to have a going away party?
- Huh?
- You think that technically?
- What is it, what's a PTU?
- Did the kid like it, the daughter?
- Did you like to eat over there?
- And you had a two hour dinner?
- You have two hour lunches and two hour dinners?
- Hmm?
- I'm teaching Greek at the senior center, right?
- How have you been?
- See what I mean?
- I like Kathy because Kathy was close and all that, you know?
- These ones were really, really hot, you know?
- Do you want me to do that now?
- Oh, you will?
- Am I all through?
- And you are leaving in...?
- Is the family going with you part of the time?
- It's completely healed isn't it?
- About what time, uh, what hour?
- That's good?
- As long as I don't get them too close together, right?
- Do I add more, or take an extra one?
- So what is the other medication?
- Is it all for, for uh, blood pressure?
- What's this?
- Is it?
- Will she?
- Am I?
- Is that for the CAT scan?
- Was it?
- What's that?
- You mean I can start eating ice cream again?
- Do I need that?
- It's not high enough for me to be treated?
- But the pain in my thigh, would it have a relationship with the...?
- So when do I take these other tests, today?
- Do you want me to come Monday?
- Next Friday, you mean on the 18th?
- It's going to be in this building, or across the street?
- Oh, I can wear the same type...?
- And you're Doctor...?
- J. [doctor's name]?
- How are you?
- Why am I bruising up so bad with this stuff?
- Can this happen when you catch a cold?
- Should I have a test today?
- You know why?
- Did my liver get bigger, or didn't it, or do they get bigger?
- Does it help you?
- Is it [unclear] or what?
- Can I use this again?
- Do you want these things or not?
- What was that all about?
- Do you remember?
- What is that one?
- What kind of a th...scan of the chest for?
- Which it does, you see?
- Do you remember I had one little patch?
- I don't have to?
- Instead of using a 14, should I try a 12 or something like that?
- The smallest that works?
- Is there any proper...any proper [unclear]?
- Keloid is it?
- Melanoma?
- Have you got it?
- Do you want me to take this off?
- How old is he now?
- Do you know it?
- Oh, you are?
- You thinking about getting out?
- So that's a problem for you to come in from there all the time?
- Have you got a [unclear] at lunch or not...12?
- But what are you going to do about someone that keeps passing out when they see blood?
- What doing that to him?
- Is that gonna really hurt?
- Do you understand me?
- What's wrong with her?
- Where's her own [unclear]?
- Where's her doctor?
- Why isn't she sending her to go to support groups and send her to..?
- Where is your mind?
- Isn't it?
- How do they do, uh, I mean, what do they do?
- How can I be in Alabama when I have to be with Mary?
- Do you understand?
- But this is physical, too, you know?
- Okay, outside of the pain medication, is there something like acupuncture that could help me, or something like that?
- In other words, I, they can do this without me going to...?
- Now, who could I go to for this?
- You're going to be in...whereabouts?
- Did you see the movie "City of Joy?"
- But you're going to be back here though after four months, aren't you?
- How do you tell your child that?
- Why do you give in to guys for crack cocaine just so you get privileges so [unclear]?
- How do I deal with that?
- But remember I got all that breaking out in here?

- Is that what it was?
- Was up a little bit?
- You know what I mean?
- Take it all together?
- How's he doing?
- Have you heard from him since he left?
- I don't have to take Estrogen...is that the ovaries?
- You know like, when your legs are asleep?
- I have an appointment tomorrow for my vision [unclear], you know?
- I think he said there was a possibility of glaucoma?
- But they would have to do a follow-up exam to see how fast in was progressing, or something?
- Is that just old age?
- Dr. F. [doctor's name]?
- Can it also be that my [unclear]?
- TED hose?
- These stockings, I can get at the drugstore?
- Well we going or were going..?
- Would that have anything to do with this situation or is that something entirely different, do you know?
- This one?
- Which is...?
- Should I put this [unclear]??
- Well, is that in the same building?
- Should I roll all this up or leave this down?
- Regularly or...?
- How did I do what?
- Oh, this time?
- Do I climb up here?
- Should I take my shoe off?
- Do I get the hose here or do I have to order it from the nursing home?
- We gonna do that here, or...?
- And when I'm done with that, what do I do?
- Will I be coming back here to this room, or no?
- What's a matter?
- This other number [unclear]?
- This is the big one, right?
- Is that right?
- Huh?
- That could be medication, maybe?
- [unclear] you know?
- Can you show me how to use this?
- Am I supposed to do two?
- Want to try for two?
- How 'bout fluid pills, no fluid pills?
- Like a cell count or something?
- Because of not eating, or you should eat before you take the medication, or...?
- What's that?
- [Name of plastic surgeon]?
- You think I could get some antibiotics or something?
- I thought maybe antibiotics might help it?
- Huh?
- Yeah, after awhile, though, you know?
- What he say the name of it?
- What about this one?
- What's that?
- What do you think is wrong with this here?
- It's swollen so bad, you know?
- Phlebitis, what do you call it?
- From [unclear]?
- That swelling, this over here?
- No?
- You gonna call him then?
- Last month?
- Unless you want me to come out there?
- What's this?
- Is that right?
- How is, uh, Dr. what do you call...?
- Is he sick or something?
- Is that right?
- Is that right?!
- And one day I lost my temper, and I didn't mean to do it, you know?
- I'm applying for disability, right?
- They give me papers on top of papers, right?
- You mean booze?
- Headed?
- What's that?
- That's what I need?
- Where do I get the mammogram at?
- Do you like it?
- You just came here or what?
- Are you gonna take residency up there or what...?
- Do you want this sheet in here, too?
- So I do have to give the urine?
- What about for the mammogram?
- And your name is?
- Gus a-what?
- What is this?
- Viral?
- More on this?
- Are you crazy?
- How did...what happened?
- Well, it doesn't really act up unless I have a cold, okay?
- What was it?
- What did she say, 94 I think it was?
- I was on, uh...Alupent?
- So who do they say to get an eye appointment, to the eye doctor?
- What did they call it?
- Put it in an icebox?
- How did that come out, my heart test?
- You should have the results yet [unclear]?
- Then, what, am I going to see you today?
- Are you gonna see me?
- Did anyone look at my tests or...?
- Should I just-are they going to keep me on the same ones?
- What about the nitroglycerine, only if I have pain right?
- If it's not severe, do you still have to take one?
- But didn't you get the imaging...did they get the imaging back or?
- Two day test, uh, with the, uh isotope in that?
- How about all the blood work and that, did everything go [unclear]?
- Will I be able to get in on that clinic now?
- Huh?
- Busy, huh?
- So did you check on the blood?
- Lupus, everything?
- No diabetes, no sugar?
- How 'bout my cholesterol level?
- There are no pills that I have to take for that, right?
- Is that the same with the, uh, are you saying that the weight, they, uh, some doctors did give weight pills but you guys don't do it, do you?
- They said it makes you nervous, is that true?
- So what about, now, could I-will I be able to get in to the nutritionist clinic?
- What did you say about my heart, what was that, no sign of what?
- What did you call that again?
- So then, I don't have to worry about that then?
- You mean for the pain?
- They didn't see nothing at all?
- So what do you think he's going to say?
- Oh is that it?
- Then he won't bother...?
- Want me to breathe?
- Now, you want me to breathe?
- Maybe in a month?
- Do you know how to do it?
- They can't see me today, right?
- Could you sign it?
- Or do you think at this time not to?
- What about the worker, do you think she could switch me on to, uh, Title 19 so I don't have to...?
- You don't think he go along with that, though, huh?
- Yeah, they gave me NSAIDS or something like that?
- Oh, really?
- In the morning, afternoon, or it doesn't matter?
- Is that the same thing with these medications because I've been taking both the pills together?
- I want to ask you, where is 20 Broad Street, is that over near the new hospital?
- I need a prescription for Tylenol?
- She said nine or ten?
- Six months?
- How 'bout in November at some time?
- Oh, how will I know if that's what's wrong with the knees?

- Is that like taking an aspirin or is that different?
- They look, they look at [unclear]?
- The one, the one they look in the rectum?
- You have to do that, I have to?
- The, uh, upper part?
- Right, you mean, you had me on that diet?
- How 'bout a social worker, could you get a social worker for me?
- Is she, she busy today?
- You said from the waist down?
- Just push the girdle down, right?
- Huh?
- What'd you say?
- What?
- Huh?
- Huh?
- And what if they can't get that blood, then what happens?
- Is she is in there?
- Where?
- Well you want to do it now?
- Do what, you say?
- Suppose they can't get enough blood?
- And, what, uh, what do then?
- I can just make the test, would that be better for you?
- And this arthritis is real bad, too, you know?
- Will you give me some more?
- This is the same as Tylenol, is it doctor?
- What's [unclear]?
- They will?
- The Coumadin?
- Pain in the back?
- Huh?
- My rectal?
- They can do that?
- My, uh mine?
- I think it's D-I-P, Diprolene?
- Do hemorrhoids hurt?
- Well what is it?
- Would it still be red?
- Do you want me to take everything off?
- Is there any way to fix that?
- Can you live without one?
- That's your whole breast?
- What's that?
- This far?
- Is the Children's Hospital open yet?
- Where, I know, what year, you're a resident, right?
- What do you want to do then?
- Why did your parents name you K. [doctor's name]?
- Were they expecting a boy or something?
- Are you from this area, or are you going to get your thing and go someplace else?
- Where you from?
- [unclear]?
- [unclear] different?
- Oh yeah?
- Oh, I can do that?
- Do the Vanceril first?
- Once in your life, that's all?
- Oh yeah?
- What?
- On you?
- Just keep it outside my lips?
- How do you [unclear] here?
- The same came back, like sharp pains in my stomach, as if I had like a, I don't know, disease or something, you know?
- Huh?
- I mean, do females, are females supposed to swell up after they have sex?
- And I feel hurt, you know?
- An EKG, or EK..?
- They out of the bathroom?
- [unclear] like blisters right there?
- Excuse me?
- It's called Butalbitol?
- Can I take them together?
- Should I just take one of each at the same time?
- Physically, you mean?
- I thought I was, was I, can you help me with that?
- Can you like check on that now?
- The urination?
- Should I worry about, uh, besides that should I worry about something called the PAS test, the little finger prick that...the PSA?
- Was it, maybe January or February? Do you have a chart with you or anything?
- Can you check?
- Your risk goes up [unclear]?
- Do you detect any infection or how do you tell if it's infected or not?
- Cholesterol, do we need to worry about cholesterol?
- Again, did you find out about my urology?
- Can I go to the men's room and I'll be right back?
- OK, where is it, do you know?
- Is that recent would you say?
- Was the cholesterol done recently?
- You don't need it every year?
- Take my socks off, too?
- Now, what do I do with this [unclear]?
- And what's, what's this other one for?
- Can you tie this for me?
- Isn't it funny?
- Really?
- By the way, do I weigh too much, do I look fat?
- You mean this way?
- Back?
- Flip 'em?
- Have you ever heard of Autism before?
- It's gonna hurt, right?
- Even with a condom?
- How do you do that, do you know?
- Now, does that mean that if there's no penetration you can have a variety of partners, too I guess?
- The vagina's the safest, I guess?
- Uh, you say, where is she? She's not here tonight, is she?
- Oh, um, before you get into this, can you, like, now don't tell my parents or anything [unclear]?
- And Beverly won't do that either, will she?
- Showers don't help, though, at all?
- Is the head doctor going to see me?
- Can I get up [unclear]?
- Yeah, would you do that, too?
- Which one?
- My children?
- What else can I do?
- Set a date?
- To cut down, do you mean?
- I'll try my hardest, okay?
- What?
- of June?
- You make it out to [unclear]?
- [unclear]?
- Excuse me?
- Should I take off my [unclear] stuff?
- This will be all right?
- The Prem-the Prem, what...?
- [unclear]?
- The mammogram?
- When do you want to see me?
- Two weeks?
- [unclear]?
- Like your getting water [unclear]?
- Now anytime my bronchitis [unclear] I should call you, right?
- [unclear]?
- [unclear]?
- I just, last week had an appointment with Dr. D. [doctor's name], you know, the urologist?
- Did you want one?
- Is it?
- Uh dry?
- What should I do, uh, call up my dentist and make an appointment?
- You like these?
- Do you want this on?
- No?
- You want me to take 'em out?
- Is it...like this?
- How much is it?
- How are you, Dr. F. [doctor's name]?
- She said she informed you about that, did she?
- What she say, did she say what I'm saying?

- Now that things are normal, I'm not as frightened as I was, you know?
- Shortly after our last visit, back in March?
- How do you say that spray?
- And she gave me...Condimine?
- But what about now, that it's not too serious?
- What's the story with Seldane now, is it not as good as they claimed it to be in the beginning?
- So I can continue to take it back again?
- Well, you've been doing a good job with me right along, you know?
- Sometimes they're worse than what they are now, okay?
- I don't know, what is that, from the arthritis or what?
- You do?
- What?
- Remember I told you I was between three incomes there, that they're all messed up?
- They all amounted to a bunch of nothing?
- Okay?
- You know what they're telling me?
- You get what I'm saying?
- What?
- You didn't have any?
- You didn't make any?
- Is it? What is it today?
- How has the sugar been?
- Is it? Really?
- What's the difference in the cells?
- Hm, you think, do children really make a difference or something?
- Do you have Corgard?
- Since I'm dieting, I probably need, do I need vitamins?
- Do you think I need a vitamin?
- How about those natural one, are they any good?
- Do you take your children?
- Really?
- Do you need this for...?
- Hi, how are you?
- Okay, but do you think it could have been the Lopressor?
- The dosage or anything, you know?
- Can I ask you a question about that?
- Can I expect, like for the next, can I expect that period to come like at an irregular time now?
- Should I just have another mammogram?
- To get back to the main hospital, how do I, um...?
- And I just have to go out front?
- Trazadone?
- I wondered, would that help [unclear]?
- Is this going to be the same medicine in the liquid?
- Huh?
- Still elevated? It's not?
- How long does [unclear]?
- Can I write something with that?
- How much?
- One?
- How often do you take a mammogram, every year?
- What I take in the morning is, uh, Lasix?
- How 'bout this?
- Is that a capsule?
- What's that?
- And could this thing, uh, make, uh, make me, uh, get that fun-get that run in my head?
- The Cardizem? The Cardizem?
- That's the capsule?
- Both of them?
- And with the, with the, uh, other four pills I take?
- But just switch 'em around from, from the day to the night?
- Instead of take, instead of take, instead of taking them in the morning, take the other medicine I take them at night with the other four pills?
- He actually left?
- Is that right?
- Are you going to be my doctor from now on?
- I beg your pardon?
- What was I going to say?
- And sometimes I'd actually eat dirt, you know?
- Now that's, that's manure isn't it?
- Could that, uh, could that give me intestinal disease, or what?
- Would that cause diarrhea?
- Um, is there something that we could easily do with uh, I mean uh, can they give me uh, a test, take an x-ray of my stomach or something, take an x-ray of my, uh, intestines and see if I have cancer?
- Now cancer would give pain, wouldn't it?
- Take off my shirt?
- What do you want to do?
- [unclear] lie back?
- [unclear] my mouth here?
- And I had to duck into the woods to go to the bathroom in the woods, you know?
- Is it painful?
- What do they-they knock you out?
- Just come in and ask them?
- In other words, I'll have to come back?
- Or I can do that now? [unclear] desk now?
- They'll call me up?
- Blood test, huh?
- When, today?
- Can we make it next week?
- The day before?
- When this, uh, when they knock you out, uh, what is it, just a needle and they put you to sleep?
- Makes you completely knocked out?
- Just drugs ya?
- Do they give ether during?
- What's, what's this for again?
- So, what do you take it and then a half-hour later it flushes ya out?
- How 'bout if I take it in the morning?
- It's in there, isn't it?
- What do I got wrong? Did you get the x-rays?
- What's the matter with them... over there?
- What do we do?
- Let me ask you something: how could I go on all-every time with this pain?
- See how that swells up?
- Well what is wrong with me, do you know?
- What is that, what does that mean, I'm going to be hunchback or something?
- You think it's doing something to my kidneys?
- See, I've been taking all this medicine, what do you think it's doing to me?
- Messing my heart up, everything?
- Is that prescription?
- Are you an M.D.?
- Do you think I'm going through the change?
- Do you think I need, uh, hormones or anything like that? Or what do they take?
- What do I do?
- You know what I mean?
- So that's not twenty-eight days, right?
- Hmm?
- What do you think I should take?
- Were you my doctor?
- I thought I had a PAP smear at that Women's Clinic?
- You [unclear] something going to happen to me?
- Should there be a test taken for hormones, for the level there is, or the hormone levels?
- Do you know, before we decide to do this, you know?
- You know what I mean?
- Did you say you were going to look up the medicines?
- What happened? Did you look it up?
- What are you going to give me? What [unclear]?
- The other one you gave me?
- What does that have in it?
- Motrin or something?
- Same drug as the other one you gave me?
- It's, uh, inflammatory or something?
- How long you going to be with this clinic?
- After you're here a year or two years, whatever, where do you go then?
- Your own practice?
- Do they have a technician...[unclear] last time, or do you want the other doctor to do that or...?
- Here, see that lump?
- How much longer you gonna be here?
- You were not the doctor that [unclear] last time?
- Who was the doctor for me?
- And then, what are you going to say?
- Only one week?

- Who you kidding?
- Uh, how much I'm taking of Synthroid?
- How much I'm taking?
- Is , uh, side-effect of that?
- Is there any side-effect beside that?
- If it's too high?
- How much is this?
- You want it to send it to me? You want me to wait?
- Should we check?
- One day you may come back?
- You have a boyfriend there?
- Would that be why I'm only a little better?
- How are they gonna see that?
- They gonna come to see me?
- How?
- They call me?
- Friday's tomorrow, right?
- How am I gonna know? They gonna call me?
- Somebody has to sign this beside[sic] you?
- When you finish here, I mean, the time today?
- And your mother? You mentioned you were gonna go with your mother and [unclear]?
- Are you the only daughter?
- And you put no substitute?
- About the col...uh, who?
- About what?
- Not that little doctor, uh, woman?
- Doesn't she have two children, though?
- Can you prescribe me that?
- Page?
- Do you have that [unclear medication name]?
- How many you give me?
- How was my potassium?
- It did?
- Where this comes?
- How are you?
- Oh, is that how you say his name?
- You know, I had a stroke, right?
- And I go along with it, you know what I mean?
- I have it more now than, uh, before, you know?
- And, maybe should I go for arthritis [unclear]?
- You know what I'm saying?
- No, what is it?
- If I don't take 'em I may run into trouble, right?
- So I must take 'em right?
- Which ones? The ones I was talking about?
- You're going to give me refills?
- What can be done about that?
- And I put my leg up, like, you know what I mean?
- What do you mean, short of breath?
- What's Elavil?
- Okay, what's, um, what do ya mean I'll be back?
- [Unclear] patient, you know?
- You understand what I'm trying to do?
- Like what?
- But I was only supposed to take one, right?
- [Unclear] get undressed?
- Do that through here?
- You know what I mean?
- I'm strong, right?
- This knee, you know what I mean?
- They do ache once in a while, you know what I'm saying?
- Why, why is this?
- That's [unclear] arteries, right?
- [Unclear] big pill?
- I still have to drink orange juice [unclear]?
- You know they'st' give you that powder, um, formula, you take it, uh, it's like a juice?
- But you're giving medicine for that, huh?
- I'm taking it already, right?
- Are you finished with this medication? Should I throw it away?
- Really?
- Is this mine?
- Arthritis?
- What, what's this?
- Now this is for my arthritis?
- Now, what about, what am I going to do with the, the...Ecotrin?
- Now I can eat, eat food?
- I'll be taking two different kinds of medications for, pain killers for arthritis, right?
- I'll get a bottle of Maalox, too, right?
- In case, I uh, I need it, but I'll wait and see, okay?
- Oh, really?
- You told her already?
- You want me to have these done today?
- Now this, this here I have to, what do I have to, [unclear] to her, right?
- Am I on my way out?
- Is this the same one's that's there?
- And this is a prescription for it?
- Do you think I have enough of this other medication?
- Now this here is for down here, right?
- See you, uh...[unclear]?
- They're having a study?
- On the patients or the physicians?
- The EKG?
- What was wrong with it?
- Was it changed for the worse or the better?
- Well, you think I need one?
- So I was thinking, I wonder if it has to do with the flu shot?
- You know?
- Am I right or wrong?
- Is that what they call angioplasty?
- So what, excuse me, what type of uh...he said that EKG was different..in what sense was that, uh, worse...condition?
- If I don't get enough blood in my, in my heart, what, what would the symptom be...what would the result be? Would I be short of breath or so?
- And another thing that I was going to say, ask, do I [unclear] have to continue taking all those pills?
- So, if I could get several refills, if you could?
- She can't believe it? She can't believe her constituents?
- Uh, what, that, that is constipating?
- Is that Cardizem, uh, C.D.?
- Will too much water might affect my...?
- But, if, if I take that pill...will drinking a lot of water still be a risk, or what?
- Seem to be working pretty hard...you go over to the Vet's hospital...you still going there?
- Do you...is there any particular strength that can, that I have to have?
- That's supposed to keep the, uh, arteries unclogged?
- That's the Vasotec?
- So this about the larger squeeze...it's, it's, uh, pumping...it's the pumping you're talking about?
- So what, uh, it's supposed to pump, what, more or less, huh?
- Huh?
- So, um, I'm going across to get the, uh, x-ray and the blood?
- Right now?
- You mean when should I come back?
- This at what, June?
- Does it have the date here?
- And how long does it last?
- OK, in other words, I should have them in the case of an emergency?
- Hmm?
- Even if it has some, uh, cotton covering?
- Then, I'll, I'll come by and drop it off at the front desk?
- You expect to graduate, is that it?
- You specializing in something?
- How are you?
- Oh, how much did I lose since last time I seen you here?
- Oh, I wanted to ask you, um, would I be able to take that shot, uh, Hepatitis B? Would you be able to give that to me?
- Are there side effects or anything?
- It costs, how much does it cost?
- Really?
- How do you go about doing that?
- Pardon me?
- Do they really work?
- How long does it take?
- What's the name of it?
- Dr. Scholl's?
- You know what I did?
- So what's the purpose, you wanna see if I'm...?
- Last time we had a camera, right?
- What's that?
- So, back on it, right?

- Like if I had to take that test, you know, like where they, the alcohol test, where you walk the straight line?
- Should I turn this thing off?
- How would I do that, through here or?
- You want me to wait until he gets here?
- You think you should give me some prescriptions?
- Are you going on vacation?
- That's all?
- Oh, you have it here?
- What did she say?
- Like what?
- Is it okay if I just, like, eat fruits and vegetables?
- What if I need somebody?
- A thousand calories is too much?
- Okay, what about this [unclear] I have to write down the time?
- Okay, what about the bread?
- [unclear]?
- [unclear]?
- [unclear] with juice?
- It tastes okay, right?
- How you doing, sir?
- For the circulation?
- How do you check cholesterol?
- Today's Friday, right?
- And then it stops, you know?
- Ninety-three?
- Eyes closed?
- Excuse me, do you have those, those papers you have to sign?
- You know?
- And, and I've, I've came back and forth, back and forth [unclear], you know?
- Have you seen Dr. K. [doctor's name]?
- Will it take long for you?
- Isn't this a tape?
- Is this a tape?
- Y'all goin' taping the conversation with me?
- Why would they need the tape?
- Ain't it eight?
- Which one you think is the best?
- Something like a pipe?
- You mean this far?
- Well, what the other medicine is?
- What's the other medicine?
- But what else do you got?
- What is it?
- Could I still take this too, uh, if that still, uh, if that burns, I mean if I...?
- Do you think I should take it every day?
- What time is it?
- I don't get no refill on that, do I?
- Well don't these give you a real good appetite?
- Oh, I can make an appointment to see my regular doctor?
- I just put it on the weather, you know?
- I said "Jesus Christ, everywhere I go...every week it's something different in a different place and I don't know"...what could that be?
- Who wants to stay in the house and lay down, you know?
- How much cleaning can you do when you're by yourself? You know?
- Where's that?
- It was?
- I gotta stay on Motrin for the rest of my life?
- What can I eat?
- Can I eat chicken?
- Pork chops?
- Boil it or bake it?
- What about, uh, watermelons and cantaloupes, I can eat them, can I...make a salad?
- The headaches?
- Can I call in if I do, like say, I run out of medication? Can I call up?
- So that's, what, good for three months [unclear]?
- If I need a refill, all I have to do is call up?
- How are you?
- They call you?
- They suggested some Percocet?
- It's awfully strong, isn't it?
- Can that hurt your appetite, too?
- Percocet?
- [unclear] take this?
- Two sixty-two?
- Is soup all right?
- Does it?
- Chicken pot pie?
- What else?
- They would alert you, wouldn't it?
- What are you going to do with her?
- [unclear] grad school?
- [unclear]?
- Will he take [unclear]?
- They're in a different state, aren't they?
- How're you doing?
- Over at Nathan Smith [Clinic]?
- After they do the reading, they will contact me now, or...?
- Will they contact the patient with the mammogram either way, whether it's positive or not?

APPENDIX B. Effects of Third Party Presence on Patient Question-Asking.

The presence of third parties was anticipated to have a confounding effect on patient question-asking, and interactions in which they were present were not included in this analysis. A preliminary analysis of the data comparing patient question-asking with and without third-parties present showed distinct variations in patient question-asking behavior. When third parties were present, patients asked significantly less questions (6.4 ± 7.7 with third-party present versus 13.3 ± 12.6 without;t=-2.9, $df = 62.6$, $p < 0.005$), originated more topics of questions (71/138, 51%, with third-party present versus 291/704, 41% without; χ^2=4.8, $df = 1$, p<0.03), asked about different topics (fewer consult, referral, and treatment plan questions; χ^2=14.7, $df = 7$, p =0.04), and asked questions at different times during the consultation (fewer question during the history phase; χ^2=20.7, $df = 4$, p <0.001).

REFERENCES

Adelman RD, Greene MG and Charon R (1987). The physician-elderly patient-companion triad in the medical encounter: the development of a conceptual framework and research agenda. *Gerontologist.* 27: 729.

American Board of Internal Medicine (1979). Clinical competence in internal medicine. *Annals of Internal Medicine.* 90: 402-11.

Annas GJ (1975). *The rights of hospital patients.* New York: Avon.

Bain DJG (1979). The content of physician/patient communication in family practice. *Journal of Family Practice.* 8: 745-53.

Bales RF (1950). *Interaction process analysis: a method for the study of small groups.* Cambridge, MA: Addison-Wesley.

Beisecker AE and Beisecker TD (1990). Patient-information seeking behaviors when communicating with doctors. *Medical Care.* 28: 19-28.

Bertakis KD (1977). The communication of information from physician to patient: a method for increasing patient retention and satisfaction. *Journal of Family Practice.* 5: 217-22.

Boreham P and Gibson D (1978). The informative process in private medical consultations: a preliminary investigation. *Social Sciences and Medicine.* 12: 409-16.

Brewer J and Hunter A (1979). *Multimethod research: a synthesis of styles.* Newbury Park, CA: Sage Publications.

Butow PN, Dunn SM, Tattersall MH and Jones QJ (1994). Patient participation in the cancer consultation: evaluation of a question prompt sheet. *Annals of Oncology.* 5: 199-204.

Cartwright A (1964). *Human relations and hospital care.* London: Routledge and Keegan.

Catlin RJO (1981). Does the doctor understand what I am asking? *American Journal of Public Health.* 71: 123-4.

Cicchetti DV, Sharma Y and Cotlier E (1982). Assessment of observer variability in the classification of human cataracts. *Yale Journal of Biology and Medicine.* 55: 81-88.

Coe RM and Prendergast CG (1985). The formation of coalitions: interaction strategies in triads. *Sociology of Health and Illness.* 7: 237.

Cohen J (1960). A Coefficient of agreement for nominal scales. *Educational and Psychological Measurement.* 20: 37-46.

Council on General Internal Medicine, American Board of Internal Medicine (1977). Attributes of the general internist and recommendations for training. *Annals of Internal Medicine.* 86: 472-3.

Davis MS (1968). Variations in patient's compliance with doctor's advice: an experimental analysis of pattern of communication. *American Journal of Public Health.* 58: 274-88.

DiMatteo MR (1979). A social psychological analysis of physician-patient rapport: toward a science of the art of medicine. *Journal of Social Issues.* 35: 12-33.

Duffy DL, Hamerman D and Cohen MA (1980). Communication skills of house officers: a study in a medical clinic. *Annals of Internal Medicine.* 93: 354-7.

Fiebach NH and Viscoli CM (1991). Patient acceptance of influenza vaccination. *The American Journal of Medicine.* 91: 393-400.

Francis V, Korsch BM and Morris MJ (1969). Gaps in doctor-patient communication: patients' response to medical advice. *New England Journal of Medicine.* 280: 535-40.

Freidson E (1970a). *Professional Dominance.* Chicago: Aldine.

Freidson E (1970b). *Profession of medicine.* New York: Dodd, Mead & Co.

Greenfield S, Kaplan S and Ware J (1985). Expanding patient involvement in care. *Annals of Internal Medicine.* 102: 520-8.

Hall JA, Roter DL and Katz NR (1988). Meta-analysis of correlates of provider behavior in medical encounters. *Medical Care.* 26: 657-75.

Haug M and Lavin B (1983). *Consumerism in medicine: challenging physician authority.* Beverly Hills, CA: Sage Publications.

Hayes-Bautista DE (1976). Modifying the treatment: patient compliance, patient control and medical care. *Social Sciences and Medicine.* 10: 233-8.

Hulka BS, Kupper LL and Cassel JC (1975). Doctor-patient communication and outcomes among diabetic patients. *Journal of Communication and Health.* 1: 15-27.

Hulka BS, Kupper LL and Cassel JC (1975). Medication use and misuse: physician-patient discrepancies. *Journal of Chronic Disease.* 28: 7-21.

Inui TS (1996). The virtue of qualitative and quantitative research. *Annals of Internal Medicine.* 125: 770-1.

Inui TS and Frankel RM (1991). Evaluating the quality of qualitative research: a proposal pro tem. *Journal of General Internal Medicine.* 6: 485-6.

Kaplan SH, Greenfield S and Ware JE Jr (1989). Assessing the effects of physician-patient interactions on the outcomes of chronic disease. *Medical Care.* 27: S110-27.

Kirscht JP and Rosenstock IM (1979). Patients' problems in following recommendations of health experts. In: GC Stone, F Cohen and NE Adler (Eds.), *Health Psychology: A Handbook.* San Francisco: Jossey-Bass.

Koos EL (1955). Metropolis: what city people think of their medical services. *American Journal of Public Health.* 45: 1551.

Korsch BM, Gozzi EK and Francis V (1968). Gaps in doctor-patient communication: doctor-patient interaction and patient satisfaction. *Pediatrics.* 42: 855-71.

Kutner B (1958). Surgeons and their patients: a study in social perception. In: EG Jaco (Ed.), *Patients, physicians and illness.* New York: Free Press.

Ley P, Bradshaw PW and Kincey JA (1976). Increasing patients' satisfaction with communications. *British Journal of Social and Clinical Psychology.* 15: 403-13.

Lichstein PR (1982). The resident leaves the patient: another look at the doctor-patient relationship. *Annals of Internal Medicine.* 96: 762-5.

McNeil BJ, Paukner SG, Sox HC Jr and Tversky A (1982). On the elicitation of preferences for alternative therapies. *New England Journal of Medicine.* 306: 1259-62.

McNeil BJ, Weichselbaum R and Pauker SG (1978). Fallacy of the five-year survival in lung cancer. *New England Journal of Medicine.* 299: 1397-1401.

Miller WL and Crabtree BF (1992). Primary care research: a multimethod typology and qualitative road map. In: BF Crabtree and WL Miller (Eds.), *Doing qualitative research: multiple strategies.* Newbury Park, CA: Sage Publications.

Orth JE, Stiles WB, Scherwitz L, Hennrikus D and Vallbona C (1987). Patient exposition and provider explanation in routine interviews and hypertensive patients' blood pressure control. *Health Psychology.* 6: 29-42.

Osofsky H (1968). The walls are within: an explanation of barriers between middle class physicians and poor patients. In: I Deutscher and E Thompson (Eds.), *Among the people*. New York: Basic Books.

Pantell RH, Stewart TJ and Diaz JK (1982). Phyician communication with children and parents. *Pediatrics*. 70: 396-402.

Parsons T (1951). *The social system*. Glencoe, Ill: The Free Press.

Paukner SG and McNeil BJ (1981). Impact of patient preferences on the selection of therapy. *Journal of Chronic Disease*. 34: 77-86.

Platt FW and McGrath JC (1979). Clinical hypocompetence: the interview. *Annals of Internal Medicine*. 91: 898-902.

Pratt L, Seligman A and Reader G (1957). Physician's view on the level of medical information among patients. *American Journal of Public Health*. 47: 1277.

Rainwater L (1968). The lower class: health, illness, and medical institutions. In: I Deutscher and E Thompson (Eds.), *Among the people*. New York: Basic Books.

Reader GS, Pratt L and Mudd MC (1957). What do patients expect from their doctors? *Modern Hospital*. 89: 88.

Roter DL (1977). Patient participation in the patient-provider interaction: the effects of patient question asking on the quality of interaction, satisfaction, and compliance. *Health Education Monograph*. 5: 281-315.

Roter DL (1984). Patient question asking in physician-patient interaction. *Health Psychology*. 3: 395-409.

Roter D (1990). Which facets of communication have strong effects on outcome--a meta-analysis. In: M Stewart and D Roter (Eds.), *Communicating with medical patients*. Newbury Park, CA: Sage Publications.

Roter DL (1995). The Roter Method of Interaction Process Analysis. Available upon request from the author.

Roter DL, Hall J and Katz NR (1987). Relations between physicians' behaviors and analogue patients'satisfaction, recall, and impressions. *Medical Care*. 25: 437-51.

Roter DL, Lipkin M Jr and Korsgaard A (1991). Sex differences in patients' and physicians' communication during primary care medical visits. *Medical Care*. 29: 1083-93.

SAS Institute Inc (1988). *SAS/STAT User's Guide, Release 6.03 Edition.* Cary, NC: SAS Institute Inc.

Shapiro MC, Najman JM and Chang A (1983). Information control and the exercise of power in the obstetrical encounter. *Social Sciences and Medicine.* 17: 139-46.

Special requirements for residency training in family practice (1978). Kansas City, MO: American Academy of Family Practice.

Stange KC, Miller WL, Crabtree BF, O'Connor PJ and Zyzanski SJ (1994). Multimethod research: approaches for integrating qualitative and quantitative methods. *Journal of General Internal Medicine.* 9: 278-82.

Starfied B, Wray C and Hess K (1981). The influence of patient-practitioner agreement on outcome of care. *American Journal of Public Health.* 71: 127-31.

Steckler A, McLeroy KR, Godman RM, Bird ST and McCormick L (1992). Toward integrating qualitative and quantitative methods: an introduction. *Health Education Quarterly.* 19: 1-8.

Stewart MA, McWhinney IR and Buck CW (1979). The doctor-patient relationship and its effect upon outcome. *Journal of the Royal College of General Practice.* 29: 77-82.

Stiles WB and Putnam SM (1990). Analysis of verbal and nonverbal behavior in doctor-patient encounters. In: M Stewart and D Roter (Eds.), *Communicating with medical patients.* Newbury Park, CA: Sage Publications.

Stiles WB, Putnam SM, Wolf MH and James SA (1979). Interaction exchange structure and patient satisfaction with medical interviews. *Medical Care.* 17: 667-81.

Strauss A and Corbin J (1990). *Basics of qualitative research: grounded theory procedures and techniques.* Newbury Park, CA: Sage Publications.

Street RL (1992). Communicative styles and adaptations in physician-parent consultations. *Social Sciences and Medicine.* 34: 1155-1163.

Street RL Jr, Voigt B, Geyer C Jr, Manning T and Swanson GP (1995). Increasing patient involvement in choosing treatment for early breast cancer. *Cancer.* 76: 2275-85.

Svarstad B (1974). The patient-physician encounter: an observational study of communication and outcome. Doctoral Dissertation. University of Wisconsin Department of Sociology.

Szasz TS and Hollender MH (1956). A contribution to the philosophy of medicine. *Archives of Internal Medicine*. 97: 585-92.

Tabak ER (1988). Encouraging patient question-asking: A clinical trial. *Patient Education and Counseling*. 12: 37-49.

Tesch R (1990). *Qualitative research: analysis types and software tools*. New York: Falmer Press.

Thompson SC, Nanni C and Schwankovsky L (1990). Patient-oriented interventions to improve communication in a medical office visit. *Health Psychology*. 9: 390-404.

Vickery DM and Fries JF (1976). *Take care of yourself*. Reading, MA: Addison Wesley.

Waitzkin H (1984). Doctor-patient communication; clinical implications of social scientific research. *JAMA*. 252: 2441-6.

Waitzkin H (1990). On studying the discourse of medical encounters: a critique of quantitative and qualitative methods and a proposal for reasonable compromise. *Medical Care*. 28: 473-88.

Waitzkin H and Stoeckle JD (1976). Information control and the micropolitics of health care. *Social Sciences and Medicine*. 10: 263-76.

Wallen J, Waitzkin H and Stoeckle JD (1979). Physician stereotypes about female health and illness: a study of patient's sex and the informative process during medical interviews. *Women's Health*. 4: 135-46.

West C (1983). 'Ask me no questions...': an analysis of queries and replies in physician-patient dialogues. In: S Fisher and AD Todd (Eds.), *The Social Organization of Doctor-Patient Communication*. Washington, DC: Center for Applied Linguitics.

White, Levinson and Roter D (1994). Oh, by the way ...": the closing moments of the medical visit. *Journal of General Internal Medicine*. 9: 24-8.

HARVEY CUSHING / JOHN HAY WHITNEY
MEDICAL LIBRARY

MANUSCRIPT THESES

Unpublished theses submitted for the Master's and Doctor's degrees and deposited in the Medical Library are to be used only with due regard to the rights of the authors. Bibliographical references may be noted, but passages must not be copied without permission of the authors, and without proper credit being given in subsequent written or published work.

This thesis by has been used by the following persons, whose signatures attest their acceptance of the above restrictions.

NAME AND ADDRESS DATE